Crescent Creek Wild and Scenic River

Crescent Ranger District
Deschutes National Forest

Wildlife Report

Includes:
Executive Summary
1. Wildlife Habitats
2. Biological Evaluation
3. Management Indicator Species, Birds of Conservation Concern, and
Landbird Conservation Strategy Focal Species
4. Survey and Manage

Prepared by: _____ **Date:** _____
Joan L. Kittrell, District Wildlife Biologist

EXECUTIVE SUMMARY

Introduction

An analysis of wildlife habitats was performed for the proposed Crescent Creek Wild and Scenic River Corridor Boundary (WSR) and Management Plan on the Crescent Ranger District of the Deschutes National Forest. The potential effects finalizing the designation of the WSR Boundary and proposed Management Plan on viable populations or habitat of Proposed, Threatened, Endangered and Region 6 Forester's Sensitive wildlife species (TES), Management Indicator Species (MIS), Birds of Conservation Concern (BCC), Landbird Conservation Strategy Focal Species (LBFS), and Northwest Forest Plan Survey and Manage (SM), were evaluated. Designation of a final Wild and Scenic River Corridor Boundary changes some Forest Plan Allocations potentially altering the consideration for wildlife species and habitat. The Management Plan is a management direction document addressing the allocation changes and future management of the lands within the WSR Corridor. The plan itself does not involve any on-the-ground management activities that could cause effects to wildlife species. Any future proposed projects under the management plan would need site-specific analyses and documentation of effects to these species.

The following is a summary of the analysis. A full analysis can be found within the Wildlife Report.

No Action Alternative A

The Deschutes National Forest Land and Resource Management Plan (LRMP) designated an interim boundary for the WSR corridor. It includes standards and guidelines (S&G) for actions within the WSR Corridor. Additional allocations include old growth, riparian reserves and scenic values. The current management allocations, standards and guidelines would remain the same with this alternatives.

Proposed Action Alternative B

The proposed action consists of the following specific actions:
(1) Establish final WSR corridor boundaries for the designated river segment; and (2) prepare a management plan that includes a monitoring program.

The management plan for the designated segment of Crescent Creek would consist of existing direction in the Forest Plan for Old Growth Management Areas and Riparian Reserves; and amendments for changing Intensive Recreation, General Forest and Scenic Views, as well as defining the WSR Standard and Guidelines found necessary for protecting the Geological and Scenic Vegetation Outstandingly Remarkable Values (ORVs). Monitoring also will be a prominent part of the plan. For jurisdictions that do not fall under Forest Service authority (e.g. private lands), the plan may make recommendations found necessary to protect or enhance river values. Actual responsibility and authority to implement those recommendations would remain with the appropriate authorities. Please refer to the *Crescent Creek Wild and Scenic River Management Plan Environmental Assessment* (EA) for more specific information on the proposed action.

Desired Future Condition

A diversity of wildlife (birds, mammals, and amphibians) find habitat within the riparian area and upland forests that make up the WSR corridor. The diversity of wildlife is recognized and managed as part of a healthy riverine ecosystem. The need for habitat and security for TES, management indicator species (MIS) and other species of special concern (Birds of Conservation Concern - BCC, Landbird Focal Species - LBFS, survey and Manage species - SM) is recognized and refugia are maintained, increased, and protected allowing wildlife to successfully live, reproduce and/or disperse through the WSR corridor.

Existing Condition

Wildlife Habitats

The Crescent Creek WSR corridor supports a variety of wildlife populations. Most are typical of faunal species found within other river systems in Central Oregon. Riparian habitat includes freshwater shrub/forest, fen, and wet meadows. Upland habitat includes lodgepole pine, lodgepole pine/spruce, ponderosa pine and mixed conifer. Unique habitats include cliff, lava and other rock formations. Although the creek offers a variety of aquatic and terrestrial habitats, the area does not contain nationally or regionally important or unique habitats or

populations of wildlife species. Confirmed and unconfirmed sightings include: Oregon spotted frog, northern spotted owl, gray wolf, wolverine, western bumblebee, cascade frog, brown creeper, great blue heron, black-backed woodpecker, northern bald eagle, goshawk, red-tailed hawk, Cooper's hawk, American marten and bobcat. This diversity of wildlife is recognized as part of a healthy riverine ecosystem.

Establishment of the final WSR boundaries for the designated river segment of Crescent Creek and development of a management plan would adjust allocations for management within the Wild and Scenic River corridor. Overall there would be a reduction of intensive recreation (administratively withdrawn) and general forest (matrix) and a corresponding increase in the Wild and Scenic River allocation (congressionally reserved). A large part of the two allocations were also within a Riparian Habitat Conservation Area which is more restrictive to vegetation management and recreation infrastructure. Wild and Scenic River allocation provides more consideration for wildlife species and their habitats.

The plan itself does not implement on-the-ground activities that could cause effects. The plan implements existing Forest Plan S&Gs or new S&Gs to further protect the WSR corridor values. Any future projects proposed contained within the Wild & Scenic River Management Plan would need site-specific analysis and documentation of effects

Proposed, Threatened, Endangered and R6 Sensitive (TES) Wildlife Species

The Threatened and Endangered list from USFWS and the Forest Service Region 6 Sensitive Species list, as specified in the Regional Foresters July 21, 2015 letter, was reviewed for species known or suspected to occur on the Deschutes National Forest. ES Table 1 shows those TES species that are present or have potential habitat within the proposed WSR boundaries.

ES Table 1. TES Species that are present or have potential habitat within the proposed WSR boundary

Species	Habitat Present
Proposed (P), Threatened (T), Endangered (E) Species	
Oregon spotted frog (T) and Critical Habitat	Life cycle habitats include: emergent wetlands in marsh, sedge fens, riverine or beaver ponds; with deep ponds or well oxygenated springs in/or adjacent to permanent water
Northern spotted owl (T) and Critical Habitat (Also MIS)	Nesting, roosting, foraging habitat consist of late and old structure, multi-story stands.
Gray wolf (E)	Habitat generalist dependent on remote areas with sufficient big game species available year round.
Wolverine (P) (Also MIS)	Mixed, high elevation forest, talus slopes, persistent spring snow.
R6 Sensitive Species (Federal Candidates for listing*)	
Northern bald eagle (Also MIS and BCC)	Over-mature ponderosa pine or mixed conifer forest for nesting or with-roosting in proximity to foraging area consisting of fish-bearing lakes and/or rivers.
Bufflehead	Utilizes tree cavities close to water.
Harlequin duck	Nest along fast-flowing rivers and mountain streams.
American peregrine falcon (Also BCC)	Nest on cliffs greater than 75 ft, in a variety of habitat types, riparian habitats for travel and foraging.
White-headed woodpecker (Also MIS, BCC, LBCS and SM)	Open old growth ponderosa pine forest with little shrub cover and a mosaic of denser areas. Two pine species to provide a winter seed source.
Northern waterthrush	Nests in dense riparian thickets of willow, alder, and/or lodgepole pine with a willow component adjacent to slow moving water.
Pacific fisher	Dense forest with a coniferous component, large snags or decadent live trees and logs for denning and resting, and complex physical structure to support prey.

Species	Habitat Present
Pallid bat (Also SM)	Roosts in rock crevices and buildings, occasionally in caves, mines, rock piles and tree cavities.
Spotted bat (Also SM)	Roots in caves, cracks and crevices in cliffs and canyons.
Fringed myotis (Also SM)	Roosts in caves, mines, rock crevices and other protected sites. Forage close to vegetative canopy.
Crater Lake tightcoil (Also SM)	Found in riparian habitats with permanent surface moisture.
Shiny tightcoil	Resides in moist microsites primarily under deciduous vegetation, and/or shaded basalt cliff with talus with riparian influence.
Johnson's hairstreak	Prefers older coniferous forests with western dwarf mistletoe for the caterpillar stage and growing plants that provide nectar for the adult.
Western bumblebee	May be found in areas with a diverse assemblage of native flora such that flowers would be constantly available throughout the active season of April to September

The remaining TES species that are **not present nor have suitable habitat** present or in close proximity to the WSR corridor include: Sierra Nevada red fox, Townsend's big-eared bat, Lewis's woodpecker tricolor blackbird, yellow rail, greater sage grouse, horned grebe, Tule goose, Columbia spotted frog, and silver-bordered fritillary.

Northern spotted owl critical habitat as well as Oregon spotted frog critical habitat overlap the Crescent Creek corridor. Northern spotted owl surveys indicate utilization of the corridor for foraging and dispersal. Data locations from surveys indicate a small population of Oregon spotted frogs are present along sections of the Crescent Creek corridor. While there is confirmed wolf use of the corridor for dispersal (OR7 and OR33) there are no established use areas that overlap the WSR corridor.

The effects to all TES species were evaluated for the project. A conflict determination and significant effect determination was made for the project. There would be no adverse effects to TES species expected from the management plan because the plan itself does not implement on-the-ground activities that could cause effects. Additionally, the plan implements existing Forest Plan S&Gs or new S&Gs to further protect the Wild & Scenic River corridor values. Any future projects proposed to carry out the Management Plan would need site-specific analysis and documentation for effects to TES species. Establishment of the final WSR boundaries for the designated river segment of Crescent Creek and development of a management plan would have **"No Effect"** on any TES species or the Designated Critical Habitat of the northern spotted owl or Oregon spotted frog.

Management Indicator Species (MIS)

The Deschutes National Forest LRMP designated select wildlife species as MIS because their welfare could be used as an indicator of other species dependent upon similar habitat conditions. ES Table 2 shows those species that are known to be present or have habitat present within the proposed Crescent Creek corridor. Species that are also TES are only listed in ES Table 1 and not duplicated in ES Table 2.

ES Table 2. MIS species that are present or have habitat within the proposed Crescent Creek corridor.

Species	Habitat Present
Management Indicator Species (MIS)	
Northern Goshawk	Open forests with a mosaic of large trees, snags and down wood suitable for foraging, nesting and post-fledgling areas. Unforested habitats
American Marten	Mixed conifer and high elevation hemlock/lodgepole pine late-successional forests
Cooper's Hawk	Deciduous and mixed conifer forest, open woodlands and riparian woodlands. Found in large forests, but more likely to occur near forest edges and clearings near lakes and streams

Sharp-shinned Hawk	Deciduous and mixed conifer forest, open woodlands and riparian woodlands. Found in large forests, but more likely to occur near forest edges and clearings near lakes and streams
Red-tailed Hawk	Large trees in mixed habitat
Great Gray Owl (Also SM)	Mature to old growth coniferous and mixed conifer/lodgepole pine forests adjacent to opening in forests, usually meadows
Great Blue Heron	Estuaries, Streams, Marshes, Lakes
Mule Deer	Mosaic of early, forage-producing stages and later, cover-forming stages of forests, i.e. conifer, ponderosa pine, lodgepole pine and mixed ponderosa/lodgepole pine forest with shrub understory, in close proximity
Elk	Mosaic of early, forage-producing stages and later, cover-forming stages of forests, in close proximity
Red-naped Sapsucker	Pine/aspen forests with riparian habitat
Pileated Woodpecker	Mature and Old Growth Mixed Conifer Forest with abundant dead wood
Black-backed Woodpecker (Also SM, BCC, Focal Species)	Conifer forests including ponderosa pine, lodgepole pine, Douglas -fir/mixed conifer with high proportions of dead trees
Three-toed Woodpecker	Lodgepole pine, mixed-conifer, Douglas -fir/mixed conifer forests at high elevations
Hairy Woodpecker	Mixed-conifer and ponderosa pine forests adjacent to deciduous stands
Hairy Woodpecker	Mixed-conifer and ponderosa pine forests adjacent to deciduous stands
Downy Woodpecker	Aspen stands with riparian habitat, Less common in mixed conifer and ponderosa pine forests
Williamson's Sapsucker (Also BCC and LBFS)	Mid- to high-elevation mature or old-growth conifer forests with fairly open canopy cover
Northern Flicker	Open forests and forests edges adjacent to open country, Terrestrial habitats

While habitat may be present for MIS species, the Wild and Scenic River Management Plan would not alter existing Forest Plan S&Gs for OGMA or Riparian Reserves, or provides new S&Gs to further protect the Crescent Creek corridor values. Implementation of the proposed WSR boundaries for the designated river segment of Crescent Creek and the development of a management plan would not alter habitat for any MIS species, nor would they contribute toward a change in trends of viability for any of the MIS species on the Crescent Ranger District or Deschutes National Forest.

Birds of Conservation Concern (BCC) and Landbird Conservation Strategy Focal Species (LBFS)
The "Birds of Conservation Concern 2008" identifies species, subspecies, and populations of all migratory non-game birds that without additional conservation protection actions, are likely to become candidates for listing under the Endangered Species Act of 1973. Bird Conservations Regions (BCRs) were developed based on similar geographic parameters. The Crescent Ranger District and the proposed Crescent Creek corridor is within BCR 9, Great Basin. Species found with BCR 9 overlap with TES, MIS and LBFS.

The Forest Service prepared a National Landbird Strategic Plan (January 2016) to maintain, restore, and protect habitats necessary to sustain healthy migratory and resident bird populations to achieve biological objectives. Individuals from multiple agencies and organizations within the Oregon-Washington Chapter of Partners in Flight participated in developing a publication for conserving landbirds in this region. *A Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington* was published in June 2000 (Altman 2000). This strategy has been used since its development in planning and project analysis. The Crescent Creek corridor falls within the Central Oregon subprovince. The landbird species selected in the conservation strategy represent focal species for habitat types or features considered at risk.

ES Table 3 displays the BCC and LBFS that have suitable habitat present in the Crescent Creek corridor. Those species previously identified in TES or MIS are not included in the following table.

ES Table3. BCC and LBFS with Suitable Habitat present in the Crescent Creek Corridor.

Species	Habitat Present
Birds of Conservation Concern (BCC)	
Flammulated Owl (Also LBFS and SM)	Associated with ponderosa pine forests and mixed conifer stands with a mean 67% canopy closure, open understory with dense patches of saplings or shrubs.
Willow Flycatcher (c) non-listed subspecies or population of T or E species.	Associated with riparian shrub dominated habitats, especially brushy/willow thickets. In SE WA also found in xeric brushy uplands.
Landbird Conservation Strategy Focal Species (LBFS)	
Pygmy nuthatch (Also SM)	Pine Forests including Ponderosa pine, lodgepole pine, or mixed conifer consisting of ponderosa pine/ Douglas-fir, Focal Species for large trees in ponderosa pine.
Brown Creeper	Prefer mature conifer forests with large live trees for foraging and large loose-barked trees for nesting. Focal Species for large trees in mixed conifer late-successional habitat
Hermit thrush	Mountain forests with dense understory. Focal Species for multi-layered/dense canopy in mixed conifer late-successional

There are no proposed activities that would alter or change existing habitat or conditions for any Birds of Conservation Concern or Landbird Focal species.

Northwest Forest Plan Survey and Manage

In 1994 the Northwest Forest Plan (NWFP) developed a system of reserves, Aquatic Conservation Strategy, and various standards and guidelines for the protection of old growth associated species. Mitigation measures were also included for species that were rare, or thought to be rare due to a lack of information about them. These species collectively known as Survey and Manage (SM) species were included in standards and guidelines under Survey and Manage, Protection Buffers, and Protect Sites from Grazing. The plan was amended in January 2001. This decision amended the NWFP Survey and Manage and related standards and guidelines to add clarity, remove duplication, increase or decrease levels of management for specific species based on new information, and established a process for making changes to management for individual species in the future (USDA 2001 pgs. ROD-1-3).

Survey and Manage animal species for the Deschutes National Forest includes the great gray owl, the evening fieldslug, Crater Lake tightcoil snail, white-headed woodpecker, black-backed woodpecker, pygmy nuthatch, flammulated owl, and bats.

Survey and Manage species that occur or have habitat within the Crescent Creek corridor and have not been included in previous tables includes the evening fieldslug. This small slug is associated with perennially wet meadows in forested habitats. Microsites where it has been found include a variety of low vegetation, litter and debris. Habitat for the evening fieldslug occurs within the WSR corridor.

Because the designation of the final boundary for the Crescent Creek Corridor and the development of management plan does not include ground altering activities there would be no change in habitat for any SM animal species.

Mitigation Measures

No mitigation measures are proposed for this action because the Management Plan itself does not include any ground-disturbing activities. Consequently, there is no potential for disturbance to nesting/denning animals, and no activities are proposed that might modify Proposed, Threatened, Endangered and/or R6 Sensitive species habitat.

INTRODUCTION

The 1988 designation of the Crescent Creek Wild and Scenic River established an interim river corridor boundary with a width of 0.25 miles from the ordinary high water mark on either side of the river for interim management during the preparation of the final boundary and comprehensive management plan. Crescent Creek originates within the Deschutes National Forest on the eastern slopes of the Cascades and flows downstream approximately 33 miles to its confluence with the Little Deschutes River. The designated Wild and Scenic area includes 10 miles, beginning at the outlet of Crescent Lake and ending at the Forest Service boundary at Forest Service Road 61 (Crescent Cut-Off Road). This designated 10 mile segment of the creek is classified as "Recreational". Recreational rivers are defined in the Wild and Scenic Rivers act as: "Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past." The ORVs for the Crescent Creek WSR include geology and scenic vegetation.

Designation of a final Wild and Scenic River (WSR) Corridor Boundary amends the Deschutes National Forest Land and Resource Management Plan (LRMP) changing some allocations. While forest-wide wildlife standards and guidelines still apply there are differing standards with each allocation. These changes potentially alter the amount of focus or consideration for wildlife species and habitat. The Management Plan is a management direction document addressing the allocation changes and future management of the lands within the WSR corridor. The plan itself does not involve any on-the-ground management activities that could cause effects to wildlife species. Any future proposed projects under the management plan still would need site-specific analyses and documentation of effects to these species.

An analysis of wildlife habitats was performed for the proposed Crescent Creek WSR corridor and Management Plan on the Crescent Ranger District of the Deschutes National Forest. The potential effects finalizing the designation of the WSR Boundary and proposed Management Plan on wildlife habitat types, viable populations or habitat of Proposed, Threatened, Endangered and Region 6 Forester's Sensitive wildlife species (TES), Management Indicator Species (MIS), Birds of Conservation Concern (BCC), Landbird Conservation Strategy Focal Species (LBFS), Northwest Forest Plan Survey and Manage (SM), and were evaluated.

MANAGEMENT DIRECTION

The Deschutes National Forest Land and Resource Management Plan

Direction throughout the analysis is provided by the 1990 Deschutes National Forest Land and Resource Management Plan (LRMP), as amended by the Northwest Forest Plan. The Forest Plan describes the desired future condition, establishes goals and objectives for forest management, and standards and guidelines for the Deschutes National Forest. The project area is located in the following Forest Plan Management Areas: Wild and Scenic Rivers, General Forest, Scenic Views, Intensive Recreation, Old Growth.

The Northwest Forest Plan

The Record of Decision (April 1994) for Amendments to Land Management Planning documents and *Standards and Guidelines for Management of Habitat for Late-Successional and Old Growth Related Species Within the Range of the Northern Spotted Owl* is referred to as the Northwest Forest Plan (NWFP). This document provides additional management direction to ensure the viability of species dependent on late successional and old growth forests. The following management allocations apply to the project area: Administratively Withdrawn, Congressionally Withdrawn, Matrix and Riparian Habitat Conservation Areas.

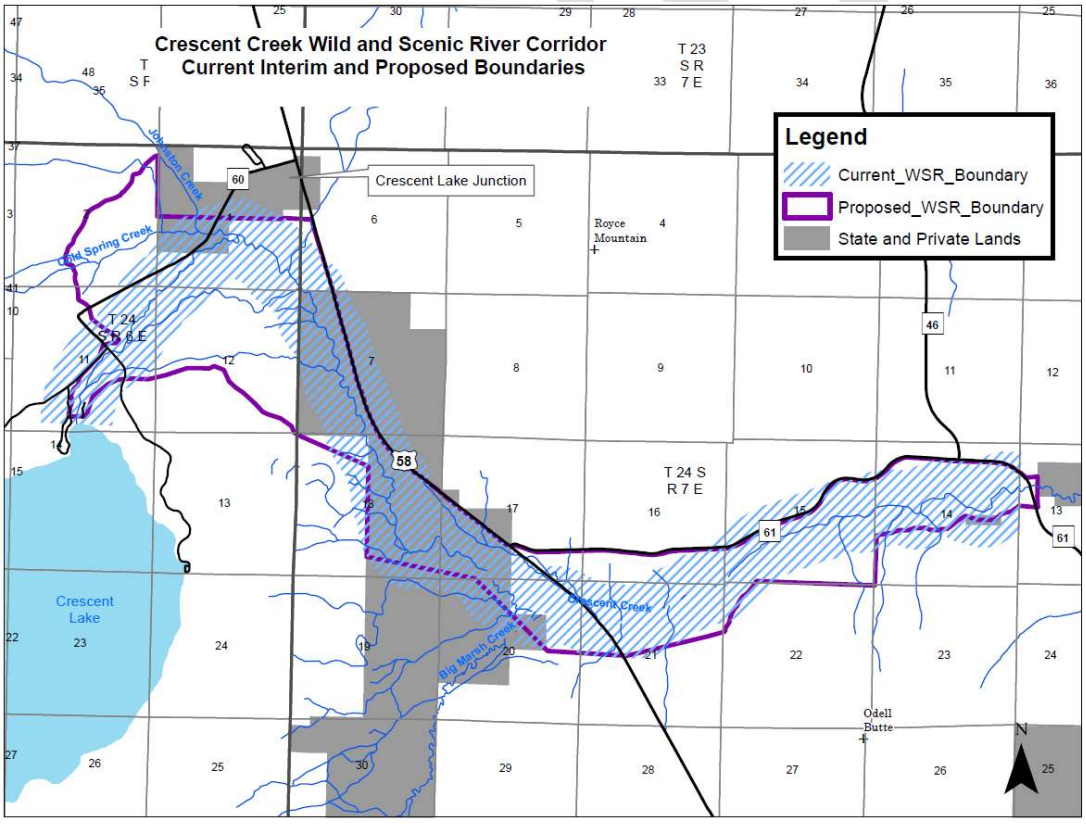
Other Direction

- **Endangered Species Act (ESA).** The Endangered Species Act of 1973 (16 USC 1531 et seq.)
- **Forest Service Manual and Handbooks (FSM/H 2670)**: Forest Service sensitive species are animal and plant species identified by the Regional Forester for which population viability is a concern.
- **Bald Eagle and Golden Eagle Protection Act 1940:** Even though they are delisted, bald eagles are still protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

- **The Migratory Bird Treaty Act of 1918 (MBTA)**: Implements various treaties and conventions between the U.S., Canada, Japan, Mexico and the former Soviet Union for the protection of migratory birds.
    - **Executive Order 13186 (66 Fed. Reg. 3853, January 17, 2001) "Responsibilities of Federal Agencies to Protect Migratory Birds"** This Executive Order directs federal agencies to avoid or minimize the negative impact of their actions on migratory birds, and to take active steps to protect birds and their habitat.
    - **Forest Service & USFWS MOU:** The purpose of this MOU is, *"to strengthen migratory bird conservation by identifying and implementing strategies that promote conservation and avoid or minimize adverse impacts on migratory birds through enhanced collaboration between the Parties, in coordination with State, Tribal, and local governments."* Under the MOU the FS Shall: *When developing the list of species to be considered in the planning process,* ***consult the current FWS Birds of Conservation Concern, 2008 (BCC)****, State lists, and comprehensive planning efforts for migratory birds.*

PURPOSE AND NEED AND PROPOSED ACTION

The 1988 designation of the Crescent Creek Wild and Scenic River established an interim river corridor boundary with a width of 0.25 miles from the ordinary high water mark on either side of the river for interim management during the preparation of the final boundary and comprehensive management plan. The purpose of the proposed action is to establish boundaries (Intro Figure 1) and develop a comprehensive management plan for the WSR corridor. Specifically, the plan will address the public use, development, and administration of the rivers, and provide for protection and enhancement of the river values through resolution of issues related to the management of the river.



Intro Figure 1. Current Interim and Proposed Boundaries

No Action Alternative A
The Deschutes National Forest Land and Resource Management Plan (LRMP) provided standards to be applied within the interim boundary for WSR. Other management allocations in the corridor include wilderness, old growth, riparian reserves and scenic values. The current management allocations, standards and guidelines would remain the same with this alternative.

Proposed Action Alternative B
The proposed action consists of the following actions: (1) establish final WSR corridor boundaries for the designated river segment; and (2) prepare a management plan that includes a monitoring program.

The management plan for the designated segment of Crescent Creek will consist of existing direction in the Forest Plan and amendments, as well standards and guidelines found necessary for protecting the identified Outstandingly Remarkable Values (ORVs). Monitoring also will be a prominent part of the plan. For jurisdictions that do not fall under Forest Service authority (e.g. private lands), the plan may make recommendations found necessary to protect or enhance river values. Actual responsibility and authority to implement those recommendations would remain with the appropriate authorities. Please refer to the *Crescent Creek Wild and Scenic River Management Plan Environmental Assessment* (EA) for more specific information on the proposed action.

DESIRED FUTURE CONDITION
A diversity of wildlife (birds, mammals, and amphibians) find habitat within the riparian area and upland forests that make up the Crescent Creek Wild and Scenic River (WSR) corridor. The diversity of wildlife is recognized and managed as part of a healthy riverine ecosystem. The need for habitat and security for federally listed or proposed for listing species, Region 6 Forester's designated Sensitive species (TES), management indicator species (MIS) and species of special concern (Birds of Conservation Concern - BCC, Landbird Focal Species - LBFS, survey and Manage species - SM) is recognized and refugia are increased, maintained and protected allowing wildlife to successfully live, reproduce and/or disperse through the corridor. Large blocks (greater than 100 acres) of core habitat is a priority to maintain.

The upper reaches contain the headwaters of Crescent Creek as well as an abundance of unique wetland habitats. Wet lodgepole areas are cycled to an earlier shrub/wetland stage through fire or deliberate management to maintain that unique habitat. The canyon section will provide remoteness and solitude for those species requiring such an environment. The creek and its environs attract this variety of life because of the clean, abundant water, diversity of vegetation, and, outside of private sections, have relatively low amount of disturbance by roads and other human activities.

Designated late successional (old growth) forest habitats and remnant old growth trees are managed for their unique habitat value and as part of an important habitat network. Snags are an important habitat component and appear in rich abundance in the corridor due to natural processes. Danger (or hazard) tree operations provide opportunities for retention or creation of fish or wildlife habitat or adding to riparian zone complexity. Willow, alder and other hardwoods habitats increase and provide important habitat diversity for wildlife. Wetlands and isolated fens are protected/restored as they provide unique habitats for a variety of common and uncommon wildlife species.

PROJECT AREA AND ANALYSIS AREA.
The project area is approximately 3,200 acres and consists of the combined Interim and Proposed WSR Corridor Boundaries. Private lands will not be analyzed, only Forest Service lands. Because no ground disturbing activities are authorized with the proposed action the analysis area and the project area are one and the same.

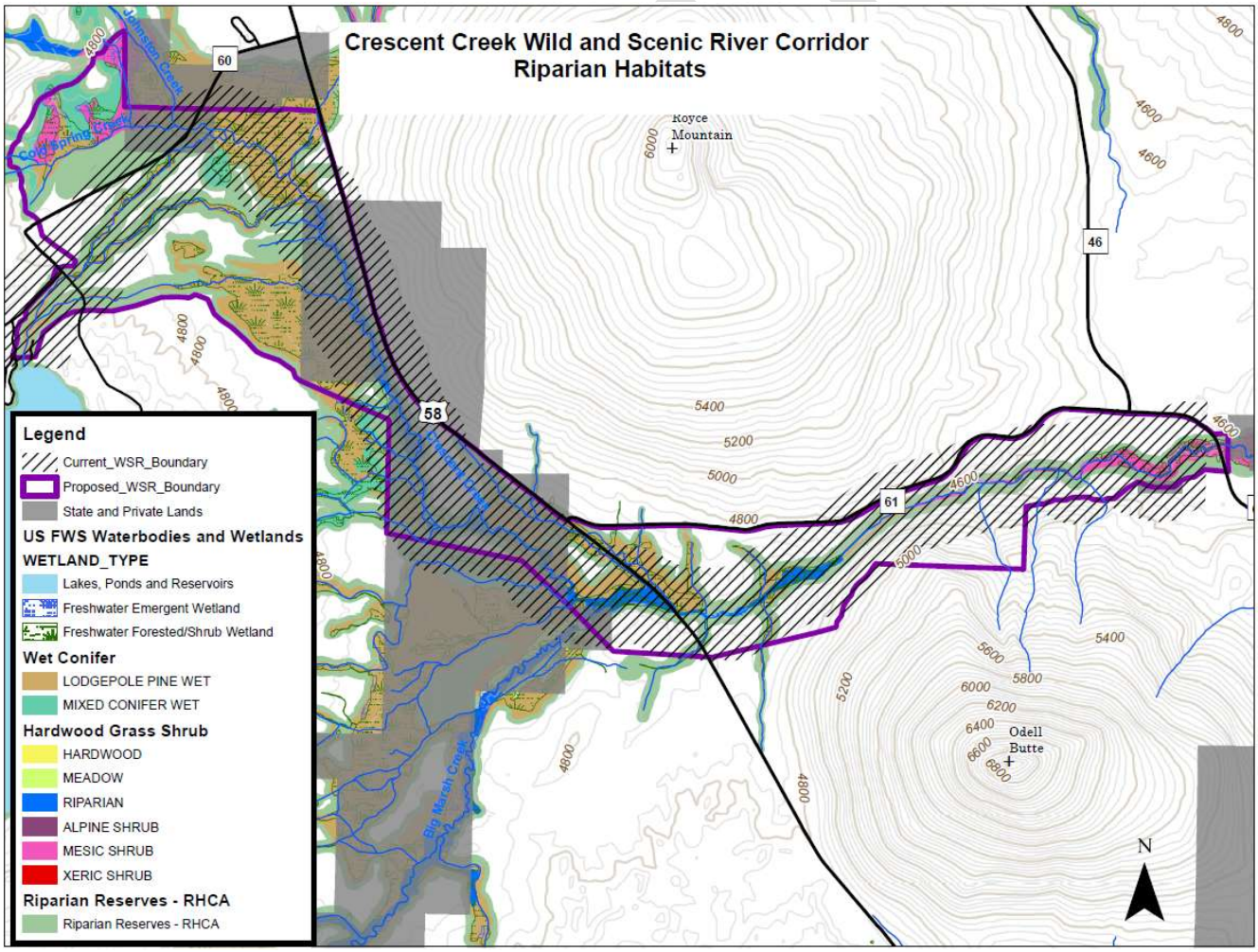
WILDLIFE HABITATS

EXISTING CONDITION

There are a diversity of habitats within the Crescent Creek Corridor. The predominated habitat is lodgepole pine intermixed with wet lodgepole, late and old ponderosa pine and mixed conifer. Small pocket fens, wetlands, and wet shrub lands occur within the riparian areas. The Northwest portion of the corridor contain the headwaters of Crescent Creek .

Riparian Habitats

Riparian habitats within the WSR corridor are diverse due to the free flowing nature of the river and geological landforms. WH Figure 1 shows the corridor, the Riparian Reserve allocation and various types of riparian habitats. The upper reaches contain the headwaters to Crescent Creek as well as the largest wetland, wet shrub, and wet meadow complexes. Many of these areas are cycling into wet lodgepole stands. Willow, alder and other hardwoods habitats are scattered throughout the corridor. The canyon section has a narrow riparian area and less diverse riparian habitats.

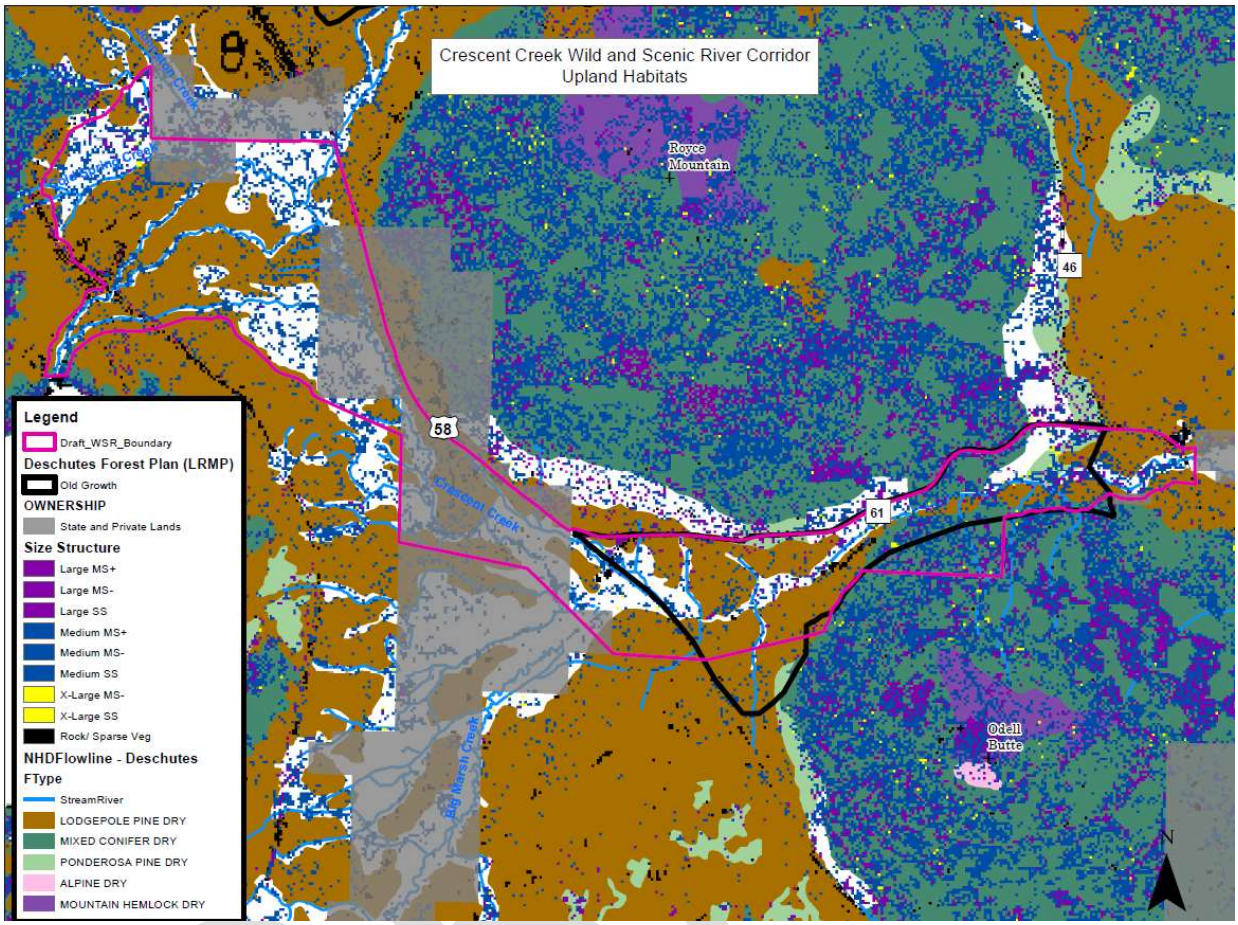


WH Figure 1. Riparian Habitat types and Riparian Reserve within the Crescent Creek Corridor

Upland Habitats

The upland habitats vary from lodgepole, lodgepole/spruce, to mixed conifer and ponderosa pine (WH Figure 2). The upper section is primarily lodgepole pine and lodgepole/ spruce mix. Medium to extra-large structure consists primarily of ponderosa pine, with some Douglas-fir, sugar pine and white fir. The canyon section, east of private lands, has less access and provides refugia habitat with late and old structure lodgepole, ponderosa

and other mixed conifers. Other unique habitats such as cliffs add to the diversity of the Crescent Creek Corridor. All vegetation types occur at all seral stages, providing the diversity of habitats for a variety of common and uncommon wildlife species.



WH Figure 2. Upland Habitat types with Tree size Structure within the Crescent Creek Corridor

Human Influences and Wildlife Habitat

Human influences on wildlife habitat include access management, vegetation management, recreation and encroachment by private land owners.

Roads

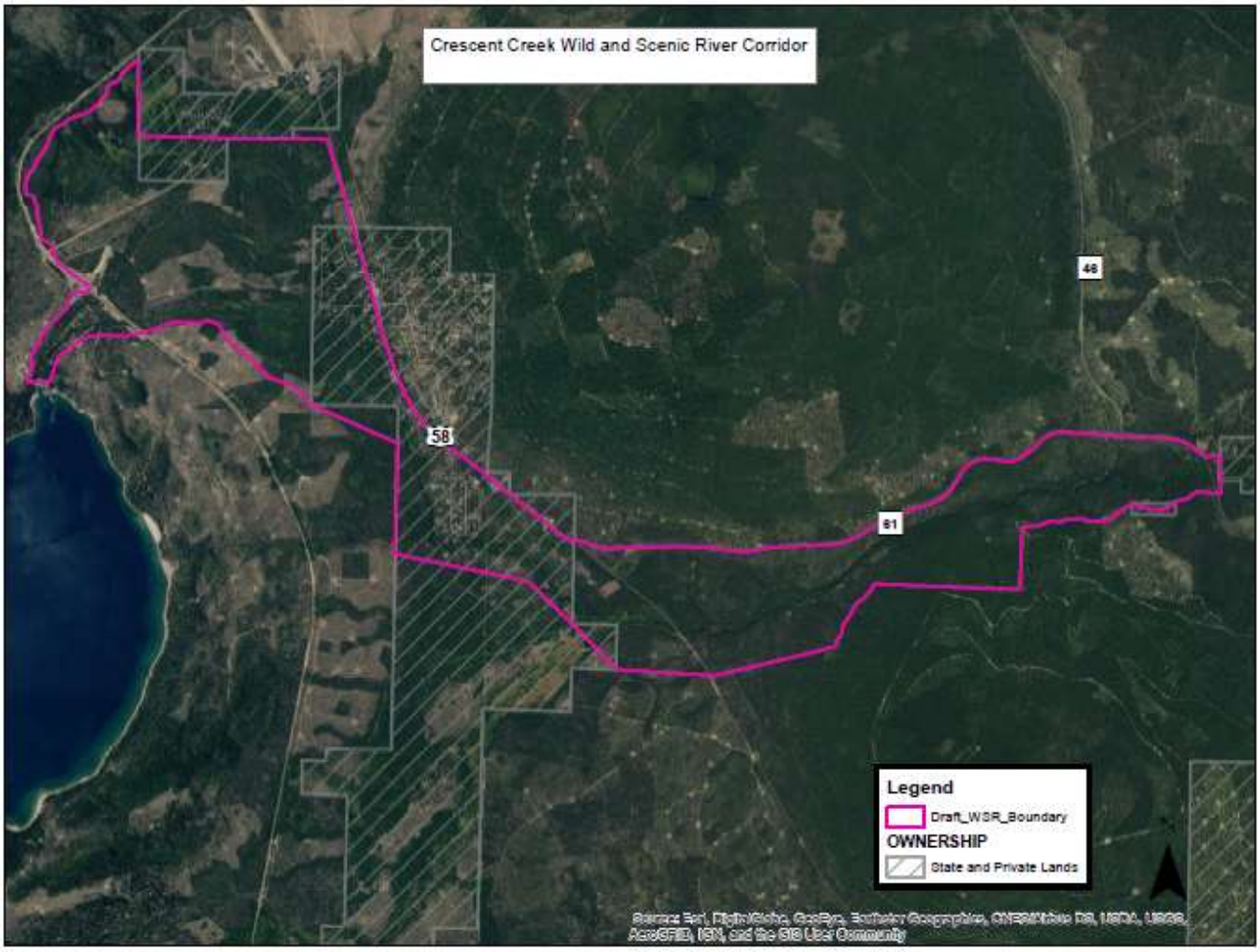
Roads facilitate nearly all other activities by providing motorized access for all management and recreational activities. On Forest Service owned lands there are approximately 10 miles of roads with 3 miles classified as closed within the WSR corridor. An unknown number of unauthroized roads and trails occur off existing open and closed roads.

Vegetation Management

There has been commercial harvest within the Crescent Creek Corridor. Vegetation management has occurred since the 1950s altering habitat in dramatic to subtle ways. See WH Figure 3. Commercial thinning, large ponderosa pine tree removal ("pumpkin picking") and/or stand regeneration cuts such as clearcuts and shelterwood harvests took place on approximately 513 acres within the proposed WSR corridor from 1950s through the 1970s. Treatments from the 1980s to the present include: Baja 58 (11 acres), BLT Vegetation Management and Fuels Reduction (97 acres), Seven Buttes (22 acres), Seven Buttes Return (51 acres), Crescent Lake Wildland-Urban Interface Fuels Reduction Plan (353 acres) or Crescent Lake Wildland-Urban Interface Project (113 acres), and Five Buttes Project (220 acres). These treatments have been thinning from below to promote late and old structure and retain large ponderosa pine and Douglas-fir trees, or fuels treatments that

treat ladder fuels with precommercial thinning and burning. Purpose and need for these projects included reducing risk of fire, insect and disease, and reducing the risk of losing the largest trees. All of these projects were completed in the past and contribute to the existing condition.

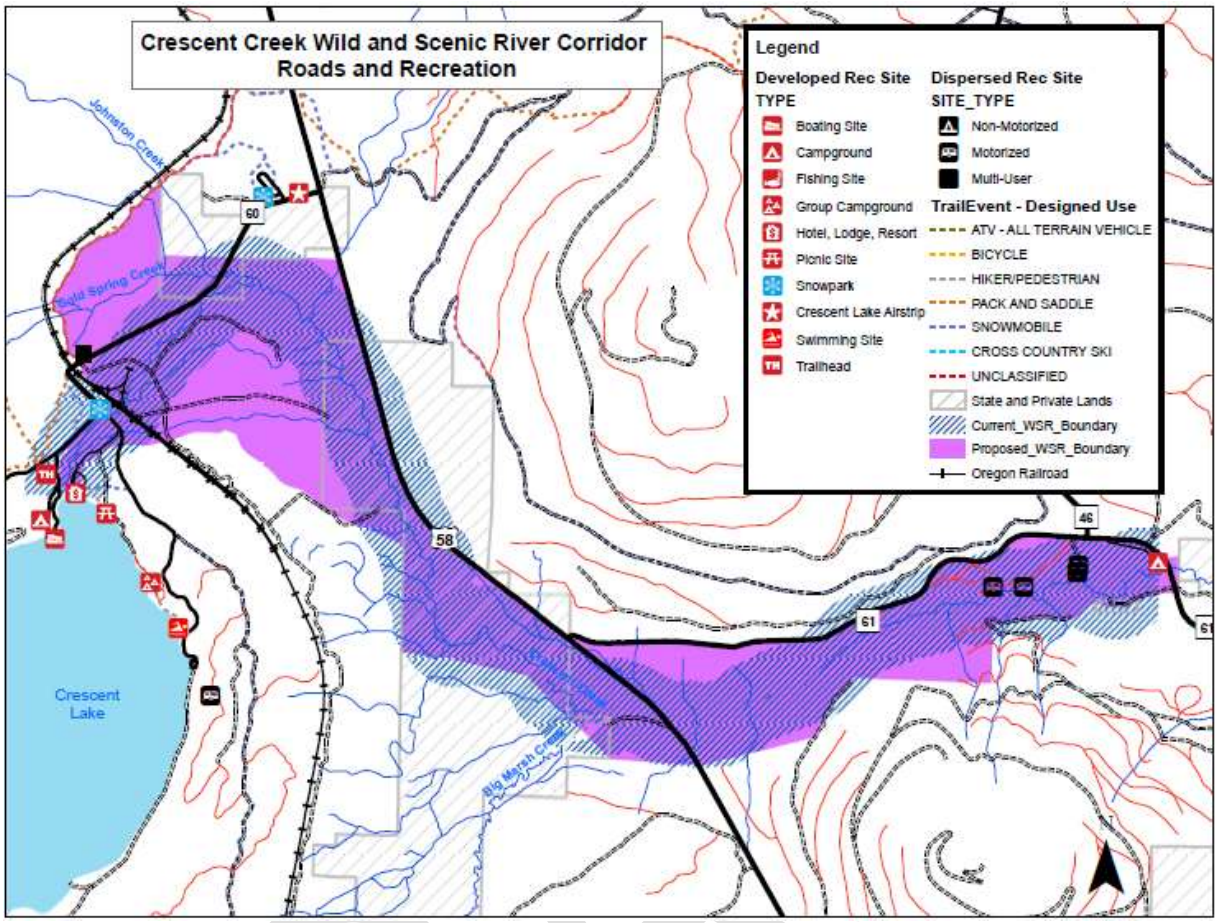
Ringo Project proposes approximately 144-164 acres of commercial thinning within the WSR corridor.



WH Figure 3 Management Activities have contributed to existing condition in the WSR Corridor

Recreation

WH Figure 4 displays the recreational use in and adjacent to the WSR Corridor. Recreation is concentrated on each end of the corridor where recreational campgrounds and dispersed sites exist. There are trails, motorized (OHV and snowmobile) and nonmotorized (hiking, biking, and horse trails) that run north and south on the west boundary of the corridor. There are no trails that go through the corridor west and east. Crescent Creek campground is on the east end of the corridor. Several dispersed sites within the WSR corridor are accessed illegally on closed roads.



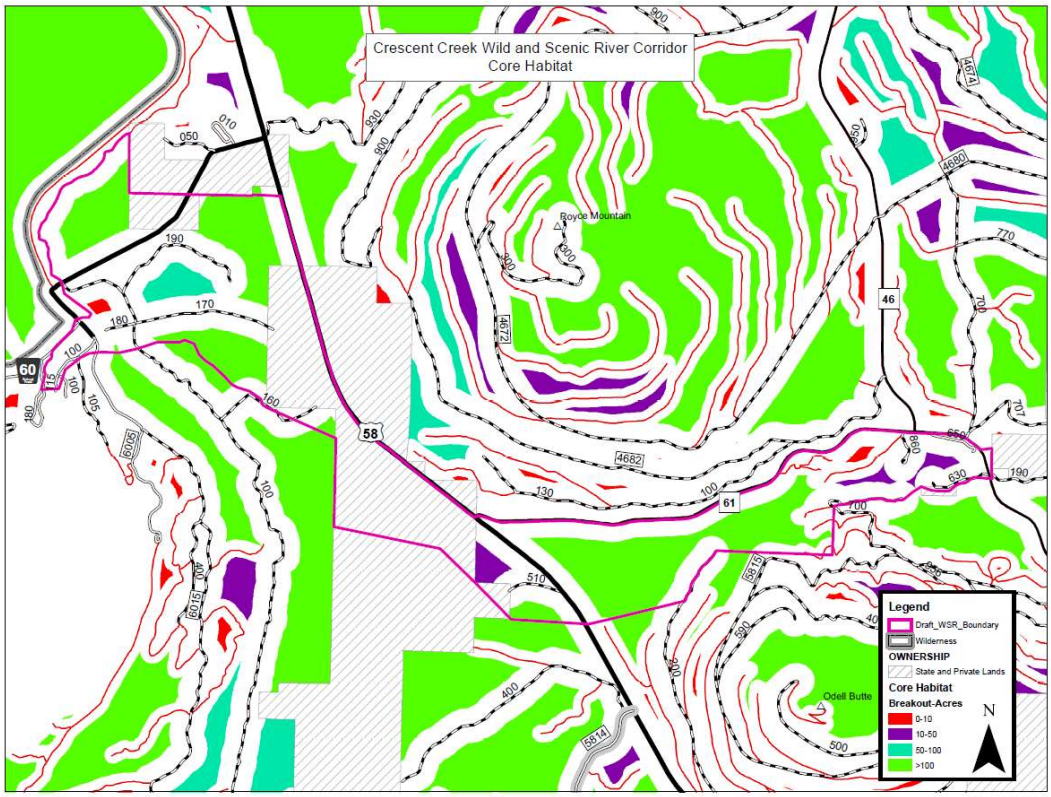
WH Figure 4. Roads and Recreation in and adjacent to the WSR Corridor.

Private Lands

Private lands make up a large part of this WSR corridor. Wildlife habitat, density of housing, vegetation alteration and disturbance (human presence, noise from use of the property) varies greatly across the private lands in and adjacent to the corridor. Encroachment of private landowners on FS lands is minor and infrequent but has involved clearing land for parking areas, fences, and outbuildings that overlap onto FS lands.

Core Habitat

Outside of altering habitat through vegetation management, human influences are constant. They reduce habitat, increase habitat fragmentation, increase disturbances (noise from motorized traffic, recreational use), reduces connectivity, provides an avenue for the introduction of non-native species, facilitates legal and illegal hunting and increases habitat degradation through soil and water contamination. The result is a reduction in core habitat for wildlife species. Disturbance zones around roads, trails and campgrounds have been mapped across the forest, WH Figure 5, illustrate the fragmentation of habitat across the area.



WH Figure 5. Core Habitat within and adjacent to the WSR Corridor.

Approximately 29% of the WSR corridor contains habitat blocks of varying sizes, the remaining 71% of the WSR corridor does not have habitat blocks. This may be an overestimation as it includes private land which was not included in disturbance zone analysis. Blocks of 10-50 and 50-100 acres occur on private lands with limited to no public access.

Wildlife species vary in their ability to utilize small blocks of habitat. Many forest wildlife species (spotted owl, wolf, elk, etc.) require large blocks of undisturbed land to live and breed successfully, provide security and/or refugia where there is limited access for hunting and trapping. Within the WSR corridor there are four large blocks of core habitat greater than 100 acres, the largest being over 400 acres (OGMA). Several other parcels are parts of larger blocks that continue outside the corridor. Approximately 26% of the corridor is in blocks greater than 100 acres.

WH Table 1. Distribution of Habitat Blocks within the WSR Corridor

Acre Category	Acres	% of Corridor
0-10	14	0%
10-50	55	2%
50-100	55	2%
>100	812	26%
Total	**937**	**29%**

Allocations

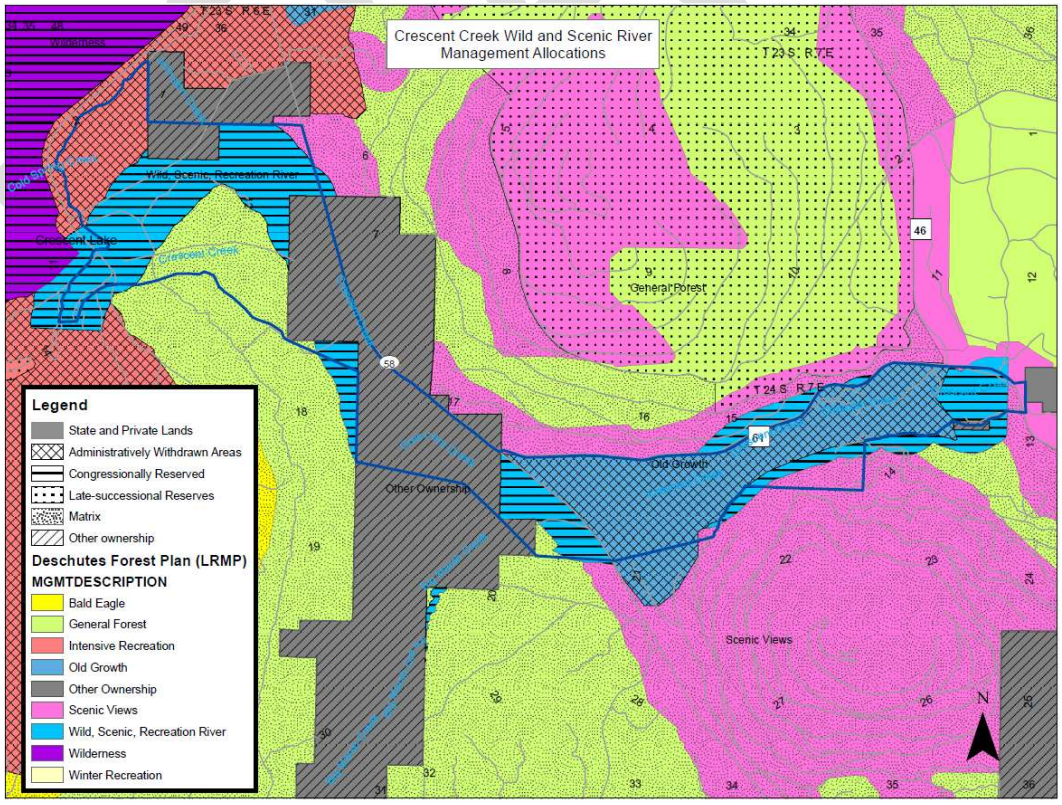
The current allocations (WH Table 2) within the interim WSR corridor include WSR, Old Growth, General Forest, Wilderness and Other ownership (Private). Each allocations has their own S&Gs and a specific focus with varying degrees of wildlife emphasis and protections. General Forest/Matrix focuses mostly on forest

products, while wilderness is wildlife and remote recreation. Purpose, goals and S&G are for each allocation are found in the LRMP.

WH Table 2. Allocations within the Interim WSR Corridor

Deschutes Land Management Allocations/NWFP	Current Interim WSR Boundary
WSR/Congressionally Reserved	1,277
Old Growth/Administratively Withdrawn	752
General Forest/Matrix	13
Wilderness/Congressionally Reserved	23
Private	984
Total Acres:	**3,050**

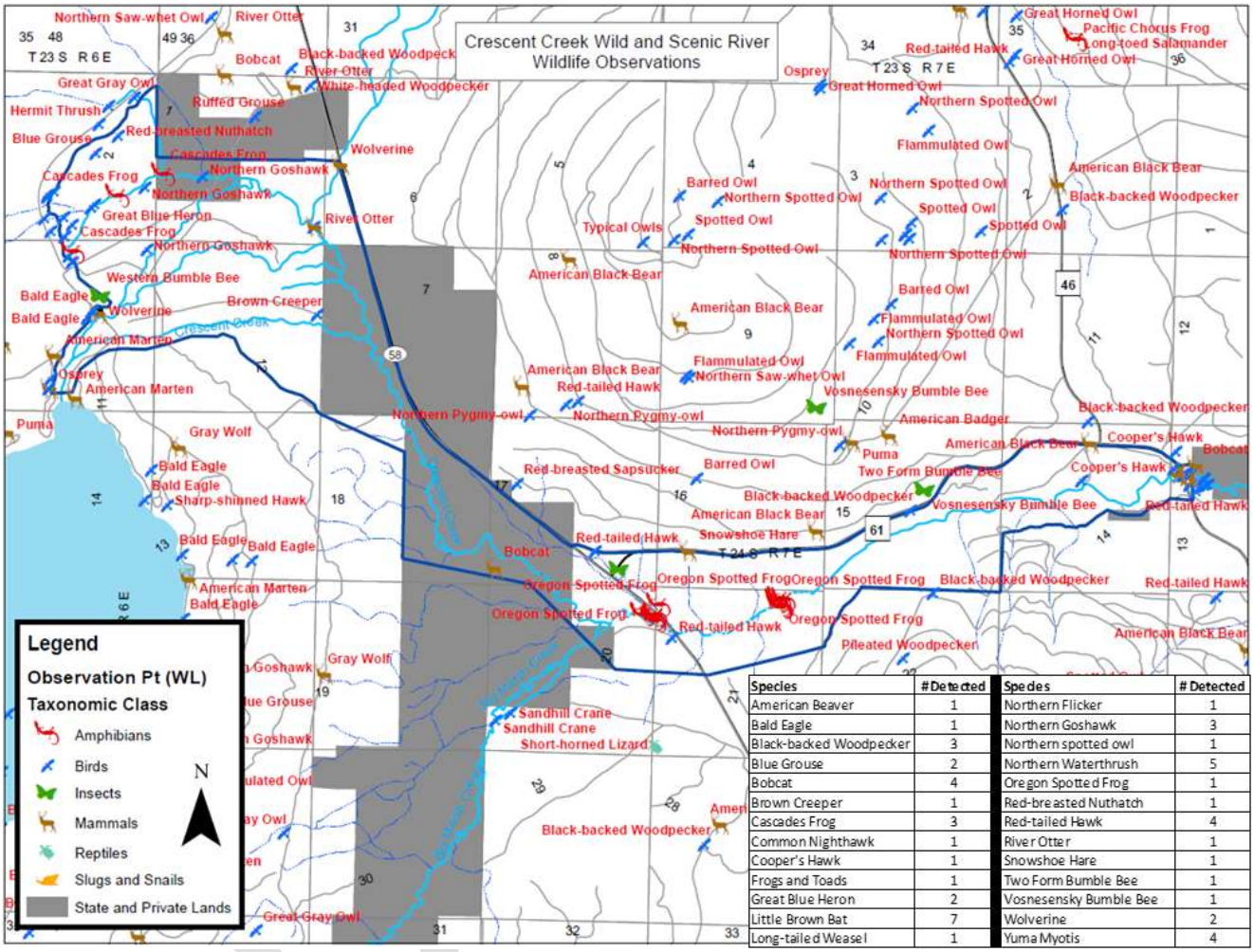
Crescent Creek Old Growth Management Area (OGMA 509) (WH Figure 6) is 970 acres. Approximately 850 acres is within the southeastern portion of the corridor. It was designated as part of a network of late and old structure habitat for the goshawk and black-backed woodpeckers. It spans the corridor in an area of the canyon between Odell Butte and Royce Mountain. The south side of the OGMA 509 is a north facing slope with lodgepole pine and mixed conifer. The mixed conifer stands has a large component of true fir as part of the conifer vegetation. The north side of the OGMA is a south facing slope that contains a combination of lodgepole pine and mixed conifer with large ponderosa pine dominating the stands. Along the creek is a very narrow riparian corridor with scattered pockets of shrubs, grasses, sedges and occasionally willow. Very few system roads intersect this area. Interior forest, riparian and small wetlands provide refugia, dispersal, core and foraging habitat for many species.



WH Figure 6. Management Allocations including Crescent Creek OGMA.

Wildlife Observations

The Crescent Creek corridor supports a wide variety of wildlife populations. Most are typical of faunal species found within other river systems in Central Oregon. The creek offers a variety of aquatic and terrestrial habitats for some of the TES, MIS and species of concern found on the Deschutes National Forest. WH Figure 7 displays wildlife observations within and adjacent to the Crescent Creek corridor. Documented observations indicate presence. A lack of documented observations does not mean a species is absent.



Species	# Detected	Species	# Detected
American Beaver	1	Northern Flicker	1
Bald Eagle	1	Northern Goshawk	3
Black-backed Woodpecker	3	Northern spotted owl	1
Blue Grouse	2	Northern Waterthrush	5
Bobcat	4	Oregon Spotted Frog	1
Brown Creeper	1	Red-breasted Nuthatch	1
Cascades Frog	3	Red-tailed Hawk	4
Common Nighthawk	1	River Otter	1
Cooper's Hawk	1	Snowshoe Hare	1
Frogs and Toads	1	Two Form Bumble Bee	1
Great Blue Heron	2	Vosnesensky Bumble Bee	1
Little Brown Bat	7	Wolverine	2
Long-tailed Weasel	1	Yuma Myotis	4

WH Figure 7. Wildlife Observations (NRIS data accessed 4/6/2017)

ENVIRONMENTAL CONSEQUENCES

Alternative A – No Action

There would be no change to any habitats. There would be no change to the boundary or management allocations or S&Gs. Existing allocations for riparian habitats would continue to be managed to meet standards for Riparian Reserves. Areas within the OGMA would still be managed for goshawk, marten and black-backed woodpeckers. The default boundary would continue to carry management direction as outlined within the LRMP. Refer to WH Table 2.

Alternative B – Proposed Boundary and Management Plan

There would be no change to riparian or upland habitats with the implementation of the proposed boundary designation and management plan. The proposed boundary change and management plan do not implement any on the ground actions, but set guidance for those actions with the change in management allocations and further protection measures.

Existing LRMP Management Allocations within the proposed WSR corridor include Wild and Scenic River/ Congressionally Reserved, General Forest/Matrix, Intensive Recreation/Administratively Withdrawn, Scenic Views/Matrix, and Old Growth/Administratively Withdrawn. WH Figure 6 provides a picture of the Allocations and the draft Final Wild and Scenic Boundary. The proposed amendment changes the General Forest, Intensive Recreation and Scenic View allocations. These allocations become WSR and the WSR S&Gs would apply.

WH Table 3 displays the current acres of each allocation within the interim corridor (3,050 acres) and proposed corridor (3,176 acres). Due to the alteration of the WSR boundary with the Proposed Action there are fewer acres of private ownership within the proposed WSR and Wilderness was excluded from the corridor. More of the OGMA and Riparian Reserve allocations occur within the proposed boundary. The proposed WSR expanded boundary also includes more of the General Forest, Intensive Recreation and Scenic View allocations. The Proposed Action changes these 3 allocations to WSR. WSR S&Gs are generally more favorable in providing, maintaining and protecting wildlife habitat than the previous allocations.

WH Table 3. Deschutes Land and Resource Management Plan Allocations within Current and Proposed Boundary and Proposed Changes to Allocations in Acres

Deschutes Land Management Allocations/NWFP	Current WSR Boundary	Existing Allocation with New WSR Boundary	Proposed WSR Boundary	Changes in Allocations from Existing Allocation to Proposed
WSR/Congressionally Reserved	1,277	910	1,605	695
Old Growth/Administratively Withdrawn*	752	851	851	0
General Forest/Matrix	13	363	0	-363
Wilderness/Congressionally Reserved*	23	0	0	0
Intensive Recreation/Administratively Withdrawn	0	238	0	-238
Scenic View/Matrix	0	96	0	-96
Private*	984	721	721	0
Total Acres:	**3,050**	**3,176**	**3,176**	**0**
* Amounts of these Allocations did not change, the amount within the WSR Boundary Changed. Other land allocations were changed				

Any future projects proposed to carry out the Wild & Scenic River Management Plan would need site-specific analysis and documentation for effects. There would be no direct indirect or cumulative to wildlife habitat with these allocation changes.

TES BIOLOGICAL EVALUATION

BIOLOGICAL EVALUATION
FOR PROPOSED, ENDANGERED, THREATENED, AND SENSITIVE ANIMAL SPECIES

Crescent Creek Wild and Scenic River Boundary and Management Plan

Crescent Ranger District
Deschutes National Forest

Proposed (P), Threatened (T), Endangered (E) Species	**Alternative A (No Action)**	**Alternative B Proposed Action**
Northern spotted owl (*Strix occidentalis*) (T)	NE	NE
Northern spotted owl Critical Habitat	NE	NE
Gray wolf (*Canis lupus*) (E)	NE	NE
Oregon spotted frog *(Rana pretiosa)* (T)	NE	NE
Oregon spotted frog Critical Habitat	NE	NE
North American Wolverine *(Gulo gulo)* (P)	NE	NE

NE = No Effect;
NLLA = May Effect, Not likely to Adversely Affect (must also meet PDCs, if not must complete a BA);
NLJ = Not Likely to Jeopardize (Proposed species only)

R6 Sensitive Species (Federal Candidates for listing*)		
Northern bald eagle *(Haliaeetus leucocephalus)*	NI	NI
Bufflehead *(Bucephala albeola)*	NI	NI
Harlequin Duck *(Histrionicus histrionicus)*	NI	NI
Tricolor blackbird *(Agelaius tricolor)*	NI	NI
Yellow rail *(Coturnicops noveboracensis)*	NI	NI
Greater (Western) sage grouse *(Centrocercus urophasianus phaeios)*	NI	NI
American peregrine falcon *(Falco peregrinus anatum)*	NI	NI
Lewis' woodpecker *(Melanerpes Lewis)*	NI	NI
White-headed woodpecker *(Picoides albolarvatus)*	NI	NI
Northern waterthrush *(Parkesia noveboracensis)*	NI	NI
Horned grebe *(Podiceps auritus)*	NI	NI
Tule goose *(Anser albifrons elagasi)*	NI	NI
Pacific fisher *(Pekania pennanti)*	NI	NI
Sierra Nevada Red Fox *(Vulpes vulpes necator)*	NI	NI
Townsend's big-eared bat *(Corynorhinus townsendii)*	NI	NI
Pallid bat *(Antrozous pallidus)*	NI	NI
Spotted bat *(Euderma maculatum)*	NI	NI
Fringed myotis *(Myotis thysanodes)*	NI	NI
Columbia spotted frog *(Rana luteiventris)*	NI	NI
Crater Lake tightcoil *(Pristiloma arcticum crateris)*	NI	NI
Shiny tightcoil *(Pristiloma wascoense)*	NI	NI
Johnson's hairstreak *(Callophrys [Mitoura] johnsoni)*	NI	NI
Silver-bordered fritillary *(Boloria selene)*	NI	NI
Western bumblebee *(Bombus occidentalis)*	NI	NI

NI = No Impact;
MIIH = May impact individuals or habitat, but will not likely contribute to a trend toward federal listing or loss of viability to the population or species;
BI = Beneficial Impact

I. INTRODUCTION

This Biological Evaluation (BE) has been prepared in compliance with the requirements of Forest Service Manual (FSM) 2630.3/ FSM 2670-2671, FSM 2672.4, FSM W.O. Amendment 2700-2009-1, and the Endangered Species Act of 1973 (Subpart B: 402.12, Section 7 Consultation, as amended) on actions and programs authorized, funded, or carried out by the Forest Service to assess their potential for effects on Threatened and Endangered species and species Proposed for federal listing (FSM 2670.1). Species classified as sensitive by the Forest Service are to be considered by conducting biological evaluations to determine potential effects of all programs and activities on these species (FSM 2670.32). The BE is a documented review of Forest Service activities in sufficient detail to determine how a proposed action may affect sensitive wildlife species. The document becomes part of the analysis file.

Project Description and Location

The Crescent Ranger District proposes to:

(1) establish final WSR corridor boundaries for each designated segment; and
(2) prepare a management plan (including a monitoring program).

The designated area includes 10 miles, beginning at the outlet of Crescent Lake and ending at the Forest Service boundary at the Crescent Cut-Off Road. This designated 10 mile segment of the creek is classified as "Recreational". Recreational rivers are defined in the Wild and Scenic Rivers act as: "*Those rivers or sections of rivers that are readily accessible by road or railroad, that may have some development along their shorelines, and that may have undergone some impoundment or diversion in the past."* Approximately six of the ten miles of Crescent Creek designated as Wild and Scenic River corridor is managed by the U.S. Forest Service with the balance in private ownership. Please refer to *the Crescent Creek Wild and Scenic River Management Plan Environmental Assessment* (EA) Chapter 2 for more specific information on the proposed action.

The legal description of this project Township 24S, Range 6E, Sections 1, 2, 11, 12; Township 24S Range 7E Sections 7, 14-20, Willamette Meridian. See Intro Figure 1.

II. SUMMARY OF EVALUATION

The Threatened and Endangered list from USFWS and the Forest Service Region 6 Sensitive Species list, as specified in the Regional Foresters July 21, 2015 letter, has been reviewed for species known or suspected to occur on the Deschutes National Forest.

This Biological Evaluation is a seven-step process to identify threatened, endangered, and sensitive wildlife species that may be associated with the project, and to evaluate any impacts the project may have to those species. The seven steps are as follows:

1. **Prefield review**. Review of available information and an identification of all listed, proposed and sensitive species known or expected to be in the project area or that the project potentially affects. .
2. **Field Reconnaissance.** Identification and description of occupied and unoccupied habitat through field clearance and surveys (as needed) of the project area for evidence of species or habitat.
3. **Conflict Determination.** Determination of effects (direct, indirect, and cumulative) the project will have on suspected or known local populations of TES species.
4. **Significance.** Analysis of the significance of the project's effects on local and entire populations of TES species (determination of irreversible or irretrievable commitment of resources).
5. **Determination of conclusions**. If Step 4 cannot be completed due to lack of information, a biological investigation is done. This pertains only to listed species and will not be shown in the table below except when applicable.
6. **Mitigations/Recommendations**. If needed to modify project to remove adverse or questionable conflict.
7. **Consultation**. Conferencing or informal/formal consultation with USFWS is initiated at appropriate stage as outlined in FSM 2673.2--1, or is otherwise arranged through formal channels.

The biological evaluation process for wildlife species which may occur within the project area on the Crescent Ranger District is summarized in TES Table 1. Field surveys were not completed or required for this evaluation because the action does not include ground-disturbing activities that may affect TES species or their habitat. The analysis area was evaluated for potential habitat and species presence using District wildlife sightings records District Geographical Information System (GIS) vegetation and habitat data layers, known locations of TES species, and District personnel knowledge of the river corridor. Species specific discussions are included after TES Table 1. Only the Threatened (T), Endangered (E), Proposed (P) or R6 Sensitive species are that present or have potential habitat in the analysis area will be further analyzed.

After a review of wildlife observation records, habitat requirements and habitat conditions present in the analysis area, it was determined the following Threatened, Endangered, Proposed or Region 6 Sensitive wildlife species are known to occur or have suitable habitat present in the analysis area: Oregon spotted frog, northern spotted owl, gray wolf, wolverine, northern bald eagle, bufflehead, harlequin duck, white-headed woodpecker, Pacific fisher, American peregrine falcon, northern waterthrush, pallid bat, spotted bat, fringed myotis, Crater Lake tightcoil, Shiny tightcoil, and western bumblebee.

The remaining TES species that are **not present** nor have suitable habitat present or in close proximity to the analysis area include: Sierra Nevada red fox, Townsend big-eared bat, Lewis's woodpecker, tricolor blackbird, yellow rail, greater sage grouse, horned grebe, Tule goose, Columbia spotted frog, and silver-bordered fritillary. There would be **"No Impact"** to these species.

TES Table 1. Summary of Biological Evaluation Steps 1-5 and 7

Identification of listed, proposed and sensitive species	Description of habitat and presence of habitat and/or species		Adverse Effect or Conflict	Cumulative effects/ Significance	Determination And Need for consultation of TE and P only
Species to consider	**Habitat Used**	**Species or Habitat present**	**Species or Habitat Affected or Impacted by Project**		
Proposed (P), Threatened (T), Endangered (E) Species					
Oregon spotted frog (*Rana pretiosa*) (T)	Highly aquatic. Breeding -requires emergent wetlands - sedge fens, riverine over-bank pools beaver ponds. Post-breeding - permanent water within wetland, riverine, and lacustrine habitats. Overwinter - deep ponds, or well oxygenated springs	Yes	No	None	NE No consultation
Northern spotted owl (*Strix occidentalis*) (T)	Nesting, roosting, foraging habitat consist of late and old structure, multi-story stands	Yes	No	None	NE No consultation
Gray wolf (*Canis lupus*) (E)	Habitat generalist dependent on remote areas with sufficient big game species available year round.	Yes	No	None	NE No consultation
wolverine (*Gulo gulo*) (P)	Wide variety of habitats, limiting factor is breeding habitat in high-elevation, alpine habitats containing sufficient snow depth during the spring denning period	Yes	No	None	NE No consultation

Identification of listed, proposed and sensitive species	Description of habitat and presence of habitat and/or species		Adverse Effect or Conflict	Cumulative effects/ Significance	Determination And Need for consultation of TE and P only
Species to consider	**Habitat Used**	**Species or Habitat present**	**Species or Habitat Affected or Impacted by Project**		
R6 Sensitive Species (Federal Candidates for listing*)					
Northern bald eagle *(Haliaeetus leucocephalus*)	Over-mature ponderosa pine or mixed conifer forest for nesting or with roosting in proximity to foraging area consisting of fish-bearing lakes and/or rivers	Yes	No	None	NI
Bufflehead (*Bucephala albeola*)	Utilizes tree cavities close to water	Yes	No	None	NI
Harlequin duck (*Histrionicus histrionicus*)	Nest along fast-flowing rivers and mountain streams	Yes	No	None	NI
Tricolor blackbird (*Agelaius tricolor*)	Nests in undisturbed fresh-water marshes of cattails, tules, bulrushes and sedge, or in thickets of willows or other shrubs	No	No	None	NI
Yellow rail (*Coturnicops noveboracensis*)	Nest in marshes or wet meadows with an abundance of sedges and an average water depth of 7 cm.	No	No	None	NI
Greater sage grouse (*Centrocercus urophasianus phaeios*)	Sagebrush communities with a mixture of sagebrush, meadows and aspen.	No	No	None	NI
American peregrine falcon (*Falco peregrinus anatum*)	Nest on cliffs greater than 75 ft, in a variety of habitat types, riparian habitats for travel and foraging	Yes	No	None	NI
Lewis's woodpecker (*Melanerpes Lewis*)	Open ponderosa pine habitats or burned ponderosa pine forest created by stand-replacing fires. Require large snags in an advanced stage of decay, or with existing cavities	No	No	None	NI
White-headed woodpecker (*Picoides albolarvatus*)	Open old growth ponderosa pine forest with little shrub cover and a mosaic of denser areas. Two pine species such as ponderosa and sugar pine provide a winter seed source	Yes	No	None	NI
Northern waterthrush (*Parkesia noveboracensis*)	Nests in dense riparian thickets of willow, alder, and/or lodgepole pine with a willow component adjacent to slow moving water	Yes	No	None	NI
Horned grebe (*Podiceps auritus*)	Nest in lakes and ponds with tall vegetation or marshy habitats	No	No	None	NI

Identification of listed, proposed and sensitive species	Description of habitat and presence of habitat and/or species		Adverse Effect or Conflict	Cumulative effects/ Significance	Determination And Need for consultation of TE and P only
Species to consider	**Habitat Used**	**Species or Habitat present**	**Species or Habitat Affected or Impacted by Project**		
Tule goose (*Anser albifrons elagasi*)	Marshes and wetland habitats	No	No	None	NI
Pacific fisher (*Pekania pennanti*)	Dense forest with a coniferous component, large snags or decadent live trees and logs for denning and resting, and complex physical structure near the forest floor to support prey	Yes	No	None	NI
Sierra Nevada red fox *(Vulpes vulpes necator)*	High elevation, alpine or subalpine forest	No	No	None	NI
Townsend's big-eared bat (*Corynorhinus townsendii*)	Maternity and hibernation takes place in caves and mine tunnels, roosts in cavities in caves and manmade structures	No	No	None	NI
Pallid bat (*Antrozous pallidus*)	Roosts in rock crevices and buildings, occasionally in caves, mines, rock piles and tree cavities	Yes	No	None	NI
Spotted bat (*Euderma maculatum*)	Roots in caves, cracks, and crevices in cliffs and canyons	Yes	No	None	NI
Fringed myotis (*Myotis thysanodes*)	Roosts in caves, mines, rock crevices and other protected sites. Forage close to vegetative canopy	Yes	No	None	NI
Columbia spotted frog (*Rana luteiventris*)	Similar to Oregon spotted frog require a mosaic of emergent wetlands, permanent water and deeper water	No	No	None	NI
Crater Lake tightcoil (*Pristiloma arcticum crateris*)	Riparian habitats with permanent surface moisture	Yes	No	None	NI
Shiny tightcoil (*Pristiloma wascoense)*	Moist microsites primarily under deciduous vegetation, and/or shaded basalt cliff with talus with riparian influence	Yes	No	None	NI
Johnson's hairstreak (*Callophrys [Mitoura] johnsoni*)	Older coniferous forests or western hemlock, white fir and/or ponderosa pine with western dwarf mistletoe for the caterpillar stage and growing plants that provide nectar for the adult	Yes	No	None	NI
Silver-bordered fritillary (*Boloria selene*)	Suitable habitat consists of mostly wet meadows, marshes, bogs and more open parts of shrubbier wetlands with violet species for the caterpillar stage and nectar sources such as composite flowers for the adult	No	No	None	NI

Identification of listed, proposed and sensitive species	Description of habitat and presence of habitat and/or species		Adverse Effect or Conflict	Cumulative effects/ Significance	Determination And Need for consultation of TE and P only
Species to consider	**Habitat Used**	**Species or Habitat present**	**Species or Habitat Affected or Impacted by Project**		
Western bumblebee (*Bombus occidentalis*)	Areas with a diverse assemblage of native flora such that flowers would be constantly available throughout the active season of April to September	Yes	No	None	NI

III. AFFECTED WILDLIFE
Threatened, Endangered, and Proposed Species

Oregon Spotted Frog (*Rana pretiosa*) and Critical Habitat

The Oregon spotted frog was proposed for listing as a threatened species under the Endangered Species Act on August 29, 2013. Threats to the frog include loss of wetlands, hydrological changes, changes in vegetation, disease and predation (Fed. Reg. 2013). On August 28, 2014, the USFWS listed the frog as a Threatened species under the Endangered Species Act (Fed. Reg. 2014). Critical Habitat was designated on May 11, 2016. The 2016 Critical Habitat Unit (CHU) rule included designation of approximately 65,038 acres and 20.34 river miles. There are a total of 14 CHUs spread over Klickitat, Skagit, Skamania, Thurston, and Whatcom Counties in Washington and Deschutes, Jackson, Klamath, Lane, and Wasco Counties in Oregon. On the Crescent Ranger District there are two CHUs, CHU 8B and CHU 9. Odell Creek, several miles east of its outlet at Odell Lake, is part of CHU 8B: Upper Deschutes River above Wickiup Dam. Crescent Creek below the dam on Crescent Lake is part of CHU 9: Little Deschutes River.

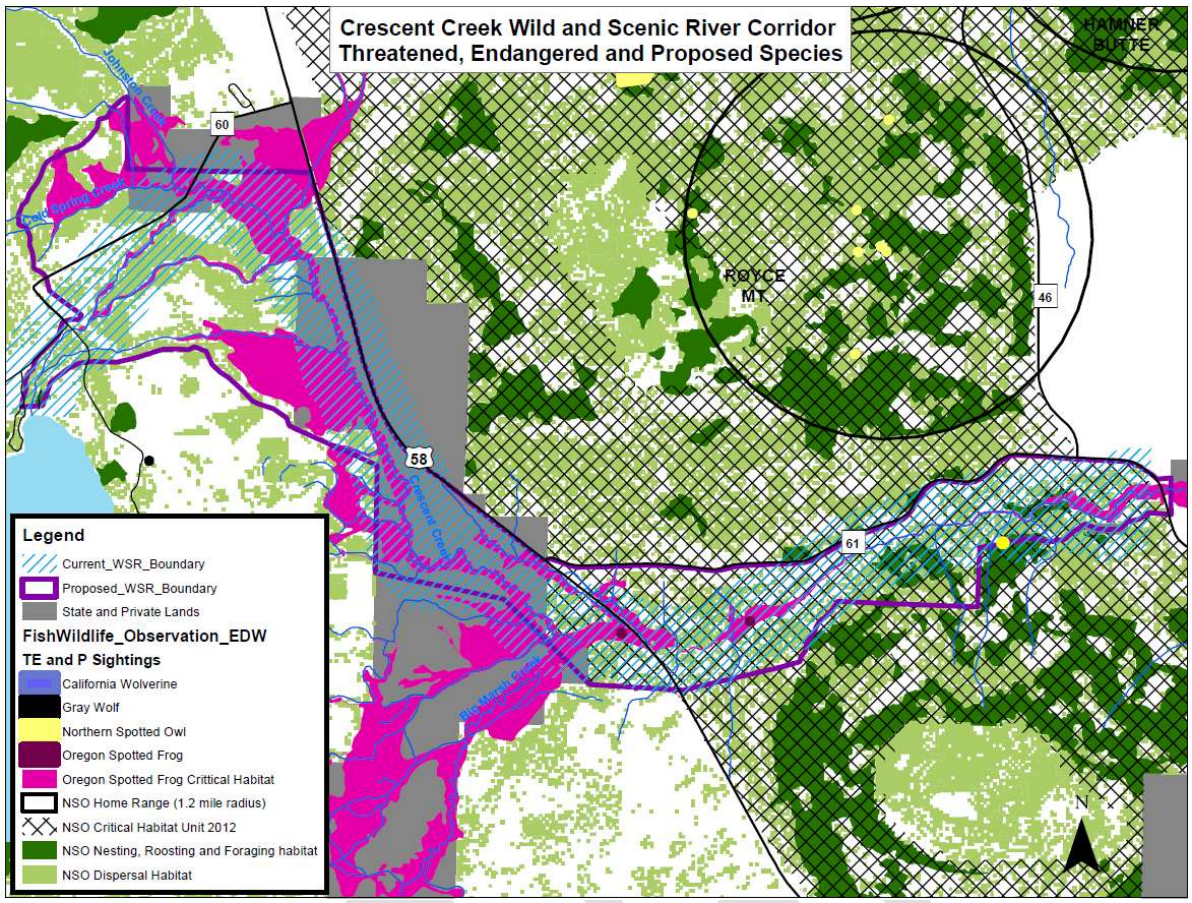
Pre-field Review

There are scattered pockets of habitat for the Oregon spotted frog throughout the WSR corridor (TES Figure 1). Two main populations occur on Crescent Creek within the WSR Corridor. One population is upstream of the bridge on highway 58 and one is just downstream of the bridge. Corridor overlaps approximately 30 acres of Oregon spotted frog CHU 9. CHU9 is also within the private portion of the corridor.

Spring visual encounter surveys for breeding frogs and egg masses have been conducted yearly from 2013 until 2016 using 2010 protocol by Pearl et.al. The number of egg masses varied each year with a low of 5 and high of 9 egg masses at the downstream location and 4-17 egg masses at the upstream location. Survey data, summaries and/or reports are on file at the Crescent Ranger District.

Direct, Indirect, Cumulative Effects and Determination

Alternative A and B. There is occupied habitat for Oregon spotted frog within the WSR Corridor. There are no changes to amount of habitat with the project with either boundary. Neither alternatives would alter habitat, or water quality. The proposed WSR boundary and management plan would have **"No Effect"** on Oregon spotted frog or Oregon spotted frog Critical Habitat. Consultation with USFWS is not required.



TES Figure 1. Threatened and Endangered Species Habitat

<u>Northern spotted owls (*Strix occidentalis caurina*), and Critical Habitat</u>

In June 1990 the U.S. Fish and Wildlife Service listed the northern spotted owl as a threatened species and critical habitat was designated in1992 (USDI USFWS 1992). On June 28, 2011, the U.S. Fish and Wildlife Service issued a Revised Recovery Plan for the Northern Spotted Owl that replaced in its entirety, the 2008 Recovery Plan. On December 4, 2012 the Service published a final rule for the Designation of Critical Habitat for the Northern Spotted Owl (Final Rule, Federal Register Vol. 77, No. 233). The Final Rule became effective January 3, 2013. Total Critical Habitat on the Deschutes National Forest is approximately 253,243 acres. Critical habitat on the Crescent Ranger District is approximately 54,607 acres within Critical Habitat Unit (CHU) 7 East Cascades North (ECN) subunit 9 (ECN9) and 3,272 acres of CHU6 West Cascade South (WCS) subunit 5 (WCS5).

Pre-field Review

There are no northern spotted owl home ranges that overlap the analysis area (TES Figure 1). The nearest nest is on Royce Butte, approximately 2 miles north of the WSR corridor. There is approximately 80 acres of nesting roosting or foraging habitat (NRF) and 1,040 acres of dispersal within the WSR corridor. There has been 1 sighting of northern spotted owls along the WSR Corridor boundary on the north lower flank of Odell Butte. Foraging and dispersal are the most likely uses of the corridor by northern spotted owls. Critical habitat unit ECN 9 overlaps the eastern half of the corridor.

Surveys for spotted owls and monitoring of known spotted owl sites have occurred at least sporadically and often annually over the past 15 years on the Crescent Ranger District, including within the vicinity of the analysis area. Most recently the area within the Ringo Project area which has been surveyed annually following the *Northern Spotted Owl Survey Protocol* (2012) since 2014. Monitoring summaries and owl reproductive histories are on file at the Crescent Ranger District. Annual monitoring of known spotted owl pairs continues to occur.

Direct, Indirect, Cumulative Effects and Determination
Alternative A - The No Action Alternative would have **"No Effect"** to the northern spotted owl as current direction would apply.

Alternative B - This alternative would have no direct, indirect or cumulative effects to northern spotted owls. The project does not include any ground-disturbing activities that could potentially impact nesting owls or their habitat so there would be no cumulative effects. There would be no change or alteration of primary constituent elements. There would be no change in management for northern spotted owl or critical habitat with the changing allocations and/or standards and guidelines. The proposed project would have **"No Effect"** on the northern spotted owl, nor CHU ECN9. Consultation with USFWS is not required. There would be no contribution to the decline or increase in the viability of the northern spotted owl population on the Deschutes National Forest.

Gray Wolf (*Canis lupis*)
Gray wolves were protected by the Endangered Species Act of 1973 when only a few hundred remained in extreme northeastern Minnesota and a small number on Isle Royale, Michigan. They were listed as Endangered in the contiguous 48 states except in Minnesota they were listed as Threatened. Gray wolves were reintroduced into Yellowstone National Park and U.S. Forest Service lands in central Idaho in 1995 and 1996. The reintroduction has been successful and recovery goals for this population have been exceeded with wolves now populating areas outside the reintroduction zone, including packs in eastern and southern Oregon. January 5, 2018, according to the ODFW website (http://www.dfw.state.or.us/wolves) there are no Areas of Known Wolf Activity (AKWAs) shown on the Deschutes National Forest.

In areas where wolves are under Federal ESA protection wolf occupation is determined through the following criteria from USFWS:

Area of confirmed presence of resident breeding packs or pairs of wolves or area consistently used by ≥ 1 resident wolf or wolves over a period of at least 1 month. Confirmation of wolf presence is to be made or corroborated by the U.S. Fish and Wildlife Service. Exact delineation of area will be described by

(1) 5-mile radius around all locations of wolves and wolf sign confirmed as described above (non-radio monitored),

(2) 5-mile radius around radio locations of resident wolves when < 20 radio locations are available (for radio monitored wolves only), or

(3) 3-mile radius around the convex polygon developed from ≥20 radio locations of a pack, pair, or single wolf taken over a period of > 6 months (for radio monitored wolves).

Pre-field Review
Several wolves have been known to travel through the Crescent Ranger District. OR7 was the first documented wolf on the Deschutes National Forest. This wolf established the Rogue pack. Another wolf, a female OR3, traveled through and at one time was utilizing Walker Mountain located on the southeast side of the Crescent District as part of its use area. OR3 paired with OR28 produced at least one pup in the summer of 2016. On October 6, 2016 OR28 was found dead near Summer Lake. They were using the Silver Lake Wildlife Management Unit in western Lake County and have been named the Silver Lake wolves. According to the ODFW website April 10, 2017 post, one large wolf has been documented in the area over the 2016/2017 winter. The status of the pup was not known. OR33, a male wolf, is also known to travel through the Crescent Ranger District. OR33's radio collar failed in August 2016. In October of 2017 OR33 was found dead on the Fremont-Winema National Forest.

Carnivore camera surveys were conducted for the Ringo project which overlaps the eastern portion of the WSR corridor. Surveys in this area from 2014 through 2016 did not detect wolves. There are undocumented sightings outside of the WSR corridor and OR7 was documented crossing the WSR corridor. Dispersal is most likely the current use of the corridor by wolves.

Direct, Indirect, Cumulative Effects and Determination
Alternative A - Implementation of the No Action Alternative would have **"No Effect"** to the gray wolf.

Alternative B - Implementation of the proposed boundary and management plan does not authorize any on the ground actions. Implementation of Alternative B would have **"No Effect"** on the gray wolf. With no effect by the proposed action there would be no cumulative effects. Consultation with the U.S. Fish and Wildlife Service is not required.

Wolverine (Gulo gulo)
August 12, 2014 the North American wolverine (*Gulo gulo*) was no longer a federal candidate for threatened species listing under the Endangered Species Act. The US Fish and Wildlife Service (USFWS) stated, "*Using the best-available science, the U.S. Fish and Wildlife Service has determined the North American wolverine should not be listed as a threatened species under the Endangered Species Act (ESA)*" (USFW 2014). In a published letter July 15, 2016, the USFWS proposed to list the North American wolverine as threatened under the Endangered Species Act (ESA). The USFWS stated the reason for proposed wolverine listing was because, "*The U.S. District Court for the District of Montana ordered the FWS on April4, 2016, to reconsider whether to list the wolverine as a threatened species.*"

The North American wolverine was listed on the Forest Service Region 6 Sensitive Species List (USDA 2011) and also designated as a Management Indicator Species for the Deschutes National Forest (USDA 1990). NatureServe (2018) gives them a state ranking of 'critically imperiled".

Wolverines occupy a wide variety of habitats from the arctic tundra to coniferous forest. The most common habitats are those that contain a high diversity of microhabitats and high prey populations. Copeland (2007) described wolverine habitat in the contiguous United States as consisting of small, isolated "islands" of high-elevation, alpine habitats containing sufficient snow depth during the denning period, separated from each other by low valleys of unsuitable habitats. Wolverines occupy habitat in a high elevation band from 6,888 feet to 8,528 feet in the mountains of the lower 48 states (Federal Register/ Vol. 73, No. 48/ Tuesday, March 11, 2008). The most critical and limiting habitat for wolverines seems to be acceptable natal denning habitat. Magoun and Copeland (1998) described two types of dens used by wolverines: natal and maternal. Natal dens occur more commonly in subalpine cirque basins associated with boulder talus slopes.

Pre-field Review
Wolverine denning habitat for the Deschutes National Forest was modeled using alpine dry, alpine meadow, glacier and rock talus lands with aspects of 320-120 degrees and clipped to areas above 5,500 feet. A total of 1,664 acres were mapped, generally in small, disjunct areas extending from Tolo Mountain at the south end of the Crescent District northward including areas on Cowhorn Mountain, Diamond Peak, Paulina Peak, Broken Top, South Sister, Middle Sister, North Sister, Black Crater, Mt. Washington, Three Finger Jack, and Mt. Jefferson. There is no wolverine habitat within the WSR corridor where elevations range from approximately 4,400 ft. to 4,700 ft. Odell also has elevation above 5,500 ft., but does not provide the other denning habitat requirements of persistent spring snow, subalpine cirque basins with talus slopes and boulders.

There are two observations in the data base of wolverines along highway 58. These observations were not confirmed and are suspect. However there is potential due to the proximity of high elevation habitat near Willamette Pass, wolverine may traverse through the area. Most likely use of the WSR corridor by wolverine would be for dispersal.

Direct, Indirect, Cumulative Effects and Determination
Alternative A - Implementation of the No Action Alternative would have **"No Effect"** to the wolerine

Alternative B - Implementation of the proposed boundary and management plan does not authorize any on the ground actions. Implementation of Alternative B would have **"No Effect"** on the wolverine. With no effect by

the proposed action there would be no cumulative effects. Consultation with the U.S. Fish and Wildlife Service is not required.

Sensitive Wildlife Species

Within the analysis areas there is potential habitat for the following Region 6 Sensitive Species: northern bald eagle, bufflehead, harlequin duck, white-headed woodpecker, Pacific fisher, American peregrine falcon, northern waterthrush, pallid bat, spotted bat, fringed myotis, Crater Lake tightcoil, Shiny tightcoil, and western bumblebee.

Northern Bald Eagle

The northern bald eagle was officially de-listed as a federal threatened species on August 8, 2007. The Federal Register (Vol. 72, No. 130/Monday July 30, 2007) stated the bald eagle has made a dramatic resurgence from the brink of extinction. While the bald eagle has been de-listed they are still protected under the Bald and Golden Eagle Protection Act of 1940. This law provides for the protection of bald eagles and the golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, transport, export or import, of any bald or golden eagle, dead or alive, including any part, nest, or egg, unless allowed by permit (16 U.S.C. 668(a); 50 CFR 22).

Bald eagle nesting territories are normally associated with lakes, reservoirs, or rivers. Nests are usually located in large conifers in uneven-aged, multi-storied stands with old-growth components (Anthony et al. 1982). Nest trees usually provide an unobstructed view of the associated body of water. Live, mature trees with deformed tops are often selected for nesting. East of the Cascade Mountains in Oregon, bald eagles prefer nesting in ponderosa pine trees that average 46 inches in diameter (range 21-76 inches dbh) and tend to be larger than the surrounding trees (Anthony et al. 1982).

The northern bald eagle was selected as a management indicator species for the Deschutes National Forest. Certain river or lake locations on the Forest are extremely important as feeding sites during the reproductive, fall and winter periods. Most bald eagles are sensitive to human disturbance during these time periods. Over-mature ponderosa pine or mixed conifer forest is preferentially selected for nesting or winter-roosting habitat.

Prefield Review

There are currently 17 bald eagle nesting territories on the Crescent Ranger District located adjacent to Odell Lake, Crescent Lake, Davis Lake, and the Crescent District side of Wickiup Reservoir. The nearest nest to the corridor is approximately 3 miles to the SW of the dam on the ridge overlooking Crescent Lake. Although there are no territories that overlap the WSR corridor, bald eagles have been seen in and adjacent to the corridor in the vicinity of the Crescent Lake Dam perching in trees adjacent to the lake. Current use within the corridor is most likely hunting and travel.

While there are large trees suitable for nesting within the WSR Corridor there are no known nests. There are no overlapping Bald Eagle Management Areas. Foraging and dispersal would be the most like use of the WSR Corridor by bald eagles.

Direct, Indirect, Cumulative Effects and Determination

Alternative A- The No Action Alternative would have **"No Impact"** to the northern bald eagles.

Alternative 2 - This alternative would have no direct or indirect effects to northern bald eagle. The project does not include any ground-disturbing activities that could potentially impact the eagles or their habitat. The proposed project would have **"No Impact"** on the northern bald eagles. There would be no contribution to the decline or increase in the viability of bald eagles population on the Deschutes National Forest.

Bufflehead

The bufflehead is North America's smallest diving duck. It winters throughout Oregon but is an uncommon breeder in the central and southern Cascades (Marshall 2003). Known nest sites in central and southern Oregon include Hosmer Lake, Crane Prairie Reservoir, Twin Lakes, Wickiup Reservoir, Davis Lake and along the Little Deschutes River in Deschutes County. The bufflehead will use tree cavities or artificial nest boxes in trees close to water. Marshall (1996) stated that human disturbance from high recreation use at Cascade Lakes and a shortage of suitable nesting cavities due to forestry practices may be having an impact on their population status.

The Bufflehead was designated as MIS under the LRMP due to its popularity for hunting and viewing. The Oregon breeding population is considered sensitive by the ODFW because of its small size and limited nesting habitat (Marshall et al. 2003). NatureServe (2018) lists the Oregon status as "imperiled breeding/secure non-breeding".

Pre-field Review

The combination of open water, wetland and considerable human disturbance at the western end of the corridor may provide limited habitat. The canyon on the east half of the corridor would provide nesting and foraging habitat for the bufflehead. There are no known records of sightings of buffleheads in the project area.

Direct, Indirect, Cumulative Effects and Determination

Alternative A - Implementation of the No Action Alternative would have **"No Impact"** to buffleheads.

Alternative B - No direct or indirect effects are expected to result from this alternative to buffleheads because no ground-disturbing activities are proposed under this action. This alternative would not alter potential nesting habitat. Implementation of this alternative would have **"No Impact"** to buffleheads. There would be no contribution to the decline or increase in the viability of the bufflehead population on the Deschutes National Forest.

Harlequin Duck

Harlequins nests along fast-moving rivers and mountain streams on instream islands or banks. It requires relatively undisturbed, low gradient, meandering mountain streams with dense shrubby riparian and woody debris for nesting and brood rearing. It also needs mid-stream boulders or log jams and overhanging vegetation for cover and loafing; indicator of high water quality. They nests beside mountain lakes and lake outlets (NatureServe 2018). Although globally secure, in Oregon is ranked as "imperiled" due to substantial declines in populations (NatureServe 2018).

Pre-field Review

The higher gradient reaches of Crescent Creek may provide limited habitat in the project area. There are no known records of sightings of harlequin ducks in the project area.

Direct, Indirect, Cumulative Effects and Determination

Alternative A - Implementation of the No Action Alternative would have **"No Impact"** to the harlequin duck.

Alternative B - No direct or indirect effects are expected to result from this alternative because no ground-disturbing activities are proposed under this action. This alternative would not alter potential nesting habitat. Implementation of this alternative would have **"No Impact"** to harlequin ducks.

White-headed Woodpeckers,

White-headed woodpeckers (WHWP) are also considered a management indicator species (MIS) for the Deschutes National Forest as well as a migratory bird focal species and Survey and Manage Species with NWFP Management Recommendations. Recommendations include retention of snags and provisions for green trees to support the WHWP.

WHWP are uncommon permanent residents in forests east of the Cascades. They occur primarily in open forest with large ponderosa pine (dead and alive), low shrub levels, and large snags (Marshall et al. 2003). The white-headed woodpeckers favor large diameter ponderosa pine for nesting and foraging (Latif et al. 2015). Larger diameter ponderosa and sugar pine trees provide bark crevices for the invertebrate prey of white-headed woodpeckers and are also good cone producers. During the winter months white-headed woodpeckers rely on seeds from ponderosa pine, sugar pine, white pine and/or lodgepole pine. Old-growth stands also have greater densities of the large-diameter snags that white-headed woodpeckers appear to select for nesting (Frenzel 2002). For Oregon, NatureServe (2018) lists them as "imperiled" to "vulnerable" with moderate to high risk of extinction or elimination due to very restricted range, very few populations and general decline in the population.

Prefield Review
There is approximately 292 acres of potential nesting habitat within the WSR Corridor. There is also foraging habitat available. There are no sightings recorded for white-headed woodpecker within the WSR Corridor.

Direct, Indirect, Cumulative Effects and Determination
Alternative A - Implementation of the No Action Alternative would have **"No Impact"** to white-headed woodpeckers.

Alternative B - No direct or indirect effects are expected to result from this alternative because no ground-disturbing activities are proposed. Neither alternative would alter potential nesting habitat. Implementation of this alternative would have **"No Impact"** to white-headed woodpeckers.

Pacific Fisher
In 2014, the USFWS changed the Pacific fisher candidate status to "proposed threatened" for the West Coast DPS of fisher (Fed. Reg. 2014c). At the time of the 2014 proposed listing, the USFWS found the designation of critical habitat for fisher to be "not determinable" (Fed. Reg. 2014c). In 2016 USFWS determined the Pacific fisher does not require protection under the ESA (USDI 2016). It is no longer a federal candidate for threatened species listing under the Endangered Species Act.

The fisher occurrence is closely associated with low- to mid-elevation forests (generally <410ft, <1250 m) with a coniferous component, large snags or decadent live trees and logs for denning and resting, and complex physical structure near the forest floor to support adequate prey populations (Powell and Zielinski 1994). Within a given region the distribution of fishers is likely limited by elevation and snow depth. Fisher are unlikely to occupy habitats in areas where elevation and snow depth act to limit their movements (Krohn et al. 1997 cited by USFWS 2004). However, in mid-elevation areas with intermediate snow depth, fishers may use dense forest patches with large trees because the overstory increases snow interception (Weir 1995 cited by USFWS 2004). Aubry and Houston (1992) cited by Powell (1993) felt that snow affected fisher distribution and population density in Washington State.

In Oregon, the fisher apparently has been extirpated from all but two portions of its historical range (Aubry and Lewis 2003). Within Oregon the two known extant populations are in the southwestern portion of the state: one in the southern Cascade Range that was established through reintroductions of fishers from British Columbia and Minnesota, which occurred between 1961 and 1981, and one in the northern Siskiyou Mountains of southwestern Oregon, which is presumed to be an extension of the population in northern California.

Prefield Review
The closest confirmed fisher is approximately 15 miles W of the project area on the Willamette National Forest in Paddy's Valley at an elevation of approximately 2,500 feet. There are unconfirmed sightings around Odell Lake approximately 6 miles north of the western end of the WSR corridor. Carnivore surveys were conducted using bait with camera sets in conjunction with the Ringo project area which overlaps the eastern portion of the corridor. Surveys were conducted the winter through spring of 2014-2016. There were no detections of fishers from these surveys.

There is potential suitable denning and foraging habitat in and adjacent to the analysis area that overlaps the northern spotted owl NRF habitat (TES Figure 1). The analysis area elevation varies from 4,400 – 4,700 feet and historically deep snow is present 4 to 6 months of years, this may also inhibit fisher use in the corridor except for dispersal.

Direct, Indirect, Cumulative Effects and Determination
Alternatives A and B - No direct or indirect effects are expected to result from either alternative because no ground-disturbing activities are proposed. Neither alternative would alter potential denning or foraging habitat. Implementation of either alternative would have **"No Impact"** to Pacific fisher.

American Peregrine Falcon
Peregrine falcons often nest on ledges or holes on the face of rocky cliffs or crags. They are commonly situated on ledges of vertical cliffs, commonly with a sheltering overhang. For Oregon, NatureServe (2018) lists them as "imperiled breeding".

Pre-field Review
There are no known peregrine falcon eyries located within or adjacent to Crescent Creek WSR corridor. However, several cliff areas have been identified in the Crescent Creek canyon section of the corridor that may provide potential nesting habitat for this species.

Direct, Indirect, Cumulative Effects and Determination
Alternative A - The No Action Alternative would have **"No Impact"** to peregrine falcons.

Alternative B - This alternative would have no direct or indirect effects to peregrine falcons. There are no falcon eyries known on the District, and the project does not include any ground-disturbing activities that could impact potential nesting habitat in the canyon section of the WSR corridor. Implementation of this alternative would have **"No Impact"** to peregrine falcon.

Northern Waterthrush,
Northern waterthrush is a small Neotropical migrant that travels long distances nocturnally. Breeding habitat in North America includes a small area in the central Cascades of Oregon. NatureServe (2018) ranks the species in Oregon as "imperiled-breeding". The birds in central Oregon seem to prefer dense riparian willow thickets along water and are usually found in willow clumps five to eight feet high, with some Sitka alder intermixed with small grassy patches and pools of water left in old stream meanders, although no nests have been found (Contreras 1988).

The population's documented northern reach in Oregon starts in Linn County near Lost Lake Creek and then trends southeast to Gilchrist along the Little Deschutes River, Klamath County, and then extends southwest along Crescent Creek and Salt Creek east of the falls, (Lane County). No northern waterthrush nests have been found in Oregon. Marshall et al. (2003) suggests the lack of nest findings is due to impenetrable nesting habitat, dense willow and other vegetation thickets along slow moving rivers.

Pre-field Review
Recent surveys indicate the species is present along the Little Deschutes River and Crescent Creek on the Crescent Ranger District (Boucher pers comm. 2008 and Rosterolla pers comm. 2012). District surveys have also found northern waterthrush in small, open lodgepole pine pockets occurring adjacent to slow moving water with a dense willow component. Northern waterthrush habitat is present within riparian areas along Crescent Creek where willows are present. Known northern waterthrush locations are outside of the interim corridor boundary, but within the proposed boundary. Survey conducted in 2015 for the Ringo project confirmed presence in the vicinity of Crescent Creek campground.

Direct, Indirect, Cumulative Effects and Determination
Alternative A - The No Action Alternative would have **"No Impact"** to northern waterthrush.

Alternative B - This alternative would have no direct or indirect effects to northern waterthrush. The project does not include any ground-disturbing activities that could impact potential nesting habitat. Implementation of this alternative would have **"No Impact"** to northern waterthrush.

Bats
Pre-field Review
Townsend's Big-Eared Bats maternity and hibernation colonies are typically in caves and mine tunnels. They roost almost exclusively in cavity roosts, both in human-made structures (that is, buildings, bridges and mines) and caves (Christy and West 1993). There are no known caves or mines on the Crescent Ranger District (L. Hickerson pers comm. 2008) and there are no documented reports of Townsend's big-eared bats occurring on the district. NatureServe (2018) ranks the Townsend's big-eared bat as "imperiled". There are no known roost sites on the Crescent Ranger District.

Pallid Bats usually roost in rock crevices and buildings, but occasionally roosts in caves, mines, rock piles and tree cavities (Harvey et al. 1999). They are suspected to occur on the Deschutes National Forest, though no documentation currently exists on their presence. NatureServe (2018) reported habitat as being arid deserts and grasslands, often near rocky outcrops and water and less abundant in evergreen and mixed conifer woodlands. NatureServe (2018) ranks the pallid bat as "imperiled". There are no known maternity or roost sites on the Crescent Ranger District.

Spotted Bat occurs in a wide range of habitats in the western regions of the continent, most often in rough, rocky, semi-arid, and arid terrain, varying from ponderosa pine forest to scrub country and open desert (Harvey et al. 1999). NatureServe (2018) reported this species roosts in caves, cracks and crevices in cliffs and canyons. Moths appear to be the primary food source. NatureServe (2018) ranks the spotted bat as "imperiled". The spotted bat is suspected to occur on the Deschutes National Forest but has not been documented.

Fringed Myotis are migratory to Oregon. Nursery colonies are established in caves, mines, and buildings. NatureServe (2018) ranks the fringed myotis as "imperiled". They report that the greatest threat to the species is human disturbance of roost sites, especially maternity colonies, through recreational caving and mine exploration. The fringed myotis is documented to occur in caves on the Bend-Ft. Rock Ranger District of the Deschutes National Forest. No observations have been reported on the Crescent Ranger District.

Direct, Indirect, Cumulative Effects and Determination
Alternative A - The No Action Alternative would have **"No Impact"** to any sensitive bat.

Alternative B - This alternative would have no direct, indirect or cumulative effects to any sensitive bat. The project does not include any ground-disturbing activities that could impact potential roosting or maternity sites in the WSR corridor. Implementation of this alternative would have **"No Impact"** to Townsend's big-eared bat, pallid bat, spotted bat or fringed myotis.

Tightcoils
The **Crater Lake tightcoil** may be found in perennially wet situations in mature conifer forests, among rushes, mosses and other surface vegetation or under rocks and woody debris within 33 ft. (10 m) of open water in wetlands, springs, seeps, and riparian areas, generally in areas which remain under snow for long periods of time during the winter. Riparian habitats in the eastern Oregon Cascades may be limited to the extent of permanent surface moisture, which is often less than 10 meters from open water (Duncan et al. 2003). NatureServe (2018) lists the Oregon status of the Crater Lake tightcoil as "critically imperiled". Most known sites for the **shiny tightcoil** are in ponderosa pine and Douglas-fir forests at moderate to high elevations (Frest and Johannes 1995 in USDA 2010). The eastern Washington record is from a relatively moist, shaded basalt cliff with talus and

deciduous (aspen, cottonwood) cover. Elsewhere the habitat is described as primarily under deciduous trees, particularly quaking aspen and red alders (Burke and Leonard in USDA 2010).

Pre-field Review

Crater Lake Tightcoil

The Crater Lake tightcoil was listed as a survey and manage species with the signing of the ROD for the Northwest Forest Plan in 1994 and was added to the Region 6 sensitive species list on April 26, 2004. There is only one confirmed occurrence of the Crater Lake tightcoil on the Crescent Ranger District, found at the confluence of Princess Creek and Odell Lake in 1999. There is potential habitat along Crescent Creek downstream from the Crescent Lake dam within the WSR corridor.

Shiny Tightcoil

There are no known sites for the shiny tightcoil on the Crescent Ranger District. Potential habitat may occur under hardwoods such as willows where they occur in seasonally or perennially wet areas. There is potential habitat along Crescent Creek.

Survey Methods and Results

Because the proposed action does not include ground-disturbing activities, surveys were not conducted for this analysis, and surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination

Alternative A - The No Action Alternative would have **"No Impact"** to the Crater Lake tightcoil or shiny tightcoil.

Alternative B - This alternative would have no direct, indirect or cumulative effects to any sensitive bat. The project does not include any ground-disturbing activities that could impact potential roosting or maternity sites in the WSR corridor. Implementation of this alternative would have **"No Impact"** to the Crater Lake tightcoil or shiny tightcoil.

Western Bumblebee

Native bees, including western bumblebees, are adapted to local weather conditions and can forage during cold, rainy periods. Bumblebees are generalist foragers, meaning they gather pollen and nectar from a wide variety of flowering plants and need a constant supply of flowers in bloom from spring to autumn (Evans et al. 2008). The ULDR project area has a wide variety and density of tree, shrubs and other flowering species.

Pre-field Review

The western bumblebee was once widespread and common throughout the western United States and western Canada before 1998. For Oregon, NatureServe (2018) lists them as "critically imperiled" to "imperiled". The western bumblebee visits a wide variety of wildflowers including Aster spp., *Gaultheria shallon* (salal), *Pedicularis* (elephant's head), *Penstemon, Phacelia, Prunus* spp. (cherry), Rhododendron spp., *Solidago* spp. (Goldenrod), *Symphoricarpos* spp. (snowberry), *Trifolium* spp. (clovers), Salix (willow), plus many others. The western bumblebee nests underground, often utilizing abandoned rodent burrows and bird nests. Hibernation sites include dead grass, and leaf litter under shrubs and trees (Xerces 2015). Western bumblebees have been documented on the Deschutes National Forest near Sparks Lake and in the Sunriver vicinity and along Crescent Creek on the Crescent Ranger District.

Survey Methods and Results

Because the proposed action does not include ground-disturbing activities, surveys were not conducted for this analysis, and surveys were not needed to assess the potential effects of this project.

Direct, Indirect, Cumulative Effects and Determination

Alternative A - The No Action Alternative would have **"No Impact"** to the western bumblebee.

Alternative B - This alternative would have no direct, indirect or cumulative effects to any sensitive bumblebee. The project does not include any ground-disturbing activities that could impact potential nesting or foraging sites in the WSR corridor. Implementation of this alternative would have **"No Impact"** to the western bumblebee.

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Analysis of Effects to Management Indicator Species, Birds of Conservation Concern, and Landbird Conservation Strategy Focal Species

Management Indicator Species (MIS)

During the preparation of the Deschutes National Forest Land and Resource Management Plan (LRMP) (USDA 1990), a group of wildlife species were identified as Management Indicator Species (MIS). These species were selected because their welfare could be used as an indicator of other species dependent upon similar habitat conditions. Indicator species can be used to assess the impacts of management actions on a wide range of other wildlife with similar habitat requirements. The species listed in MIS Table 1 were selected for the Deschutes National Forest.

The following table displays species by presence and/or habitat within the project area for Management Indicator Species (MIS) that may be present or have habitat on the Deschutes National Forest.

MIS Table 1. Wildlife Species Potential within the Project Area Species

Species	Habitat	Indicator For	Species or Habitat Present Analysis Area	Species or Habitat affected by Project
Northern Spotted Owl (see TES)	Old growth mixed conifer forest	Dense, mature old growth mixed conifer forest	Yes	No
Northern Bald Eagle (See TES)	Lakeside with large trees	Large trees	Yes	No
Northern Goshawk	Open forests with a mosaic of large trees, snags and down wood suitable for foraging, nesting and post-fledgling areas. Unforested habitats	Dense Mature and Old Growth Ponderosa Pine, also Lodgepole Pine, Mixed-Conifer Forests (Biological Community Barometer Species)	Yes	No
American Marten	Mixed conifer and high elevation hemlock/lodgepole pine late-successional forests	Dense, Multi-Layered, Mature, and Old Growth Forest, also Lodgepole Pine and Mtn. Hemlock Forests (Biological Community Barometer Species)	Yes	No
Cooper's Hawk	Deciduous and mixed conifer forest, open woodlands and riparian woodlands. Found in large forests, but more likely to occur near forest edges and clearings near lakes and streams	Dense Forest Species	Yes	No
Sharp-shinned Hawk	Deciduous and mixed conifer forest, open woodlands and riparian woodlands. Found in large forests, but more likely to occur near forest edges and clearings near lakes and streams	Dense Forest Species	Yes	No
Red-tailed Hawk	Large trees in mixed habitat	Non-Game Species of Special Interest	Yes	No

Species	Habitat	Indicator For	Species or Habitat Present Analysis Area	Species or Habitat affected by Project
Great Gray Owl	Mature to old growth coniferous and mixed conifer/lodgepole pine forests adjacent to opening in forests, usually meadows	Edge Species	Yes	No
Osprey	Nests within 2 miles of fish bearing bodies of water	Non-Game Species of Special Interest	No	No
Golden Eagle	Elevated nest sites in open country	Non-Game Species of Special Interest	No	No
Great Blue Heron	Estuaries, Streams, Marshes, Lakes	Riparian Species	Yes	No
American Peregrine Falcon (See TES)	Cliffs and Riparian	TES	No	No
Wolverine	Mixed forests, High elevations	TES	No	No
Townsend's Big-eared (See TES)	Roost sites in building, caves and bridges	TES	No	No
Mule Deer	Mosaic of early, forage-producing stages and later, cover-forming stages of forests, i.e. conifer, ponderosa pine, lodgepole pine and mixed ponderosa/lodgepole pine forest with shrub understory, in close proximity	Popular for hunting or viewing	Yes	No
Elk	Mosaic of early, forage-producing stages and later, cover-forming stages of forests, in close proximity	Popular for hunting or viewing	Yes	No
Lewis's Woodpecker (See TES)	Open Ponderosa Pine habitat near water	Snags	No	No
Red-naped Sapsucker	Pine/aspen forests with riparian habitat	Snags	Yes	No
White-headed Woodpecker (See TES)	Open ponderosa pine or mixed-conifer forests dominated by ponderosa pine. Densities increase in large diameter or old-growth sites.	Snags	Yes	No
Pileated Woodpecker	Mature and Old Growth Mixed Conifer Forest with abundant dead wood	Snags and down wood	Yes	No
Black-backed Woodpecker	Conifer forests including ponderosa pine, lodgepole pine, Douglas -fir/mixed conifer with high proportions of dead trees	Snags	Yes	No

Species	Habitat	Indicator For	Species or Habitat Present Analysis Area	Species or Habitat affected by Project
Three-toed Woodpecker	Lodgepole pine, mixed-conifer, Douglas -fir/mixed conifer forests at high elevations	Mature and Old Growth Lodgepole Pine Forest, also Forests with Engelmann Spruce or Mtn. Hemlock (Biological Community Barometer Species)	Yes	No
Hairy Woodpecker	Mixed-conifer and ponderosa pine forests adjacent to deciduous stands	Snags	Yes	No
Downy Woodpecker	Aspen stands with riparian habitat, less common in mixed conifer and ponderosa pine forests	Snags	Yes	No
Williamson's Sapsucker	Mid- to high-elevation mature or old-growth conifer forests with fairly open canopy cover	Snags	Yes	No
Northern Flicker	Open forests and forests edges adjacent to open country, Terrestrial habitats	Snags	Yes	No
Common loon	Edges of remote freshwater ponds and lakes	Popular for hunting or viewing	No	No
Pied-billed grebe	Ponds, lakes, channels and sloughs with emergent vegetation	Popular for hunting or viewing	No	No
Horned grebe	Open lakes and ponds with emergent vegetation	Popular for hunting or viewing	No	No
Red-necked grebe	Lakes and ponds in forested areas	Popular for hunting or viewing	No	No
Eared grebe	Open lakes and ponds with emergent vegetation	Popular for hunting or viewing	No	No
Western grebe	Marshes with open water and lakes and reservoirs with emergent vegetation	Popular for hunting or viewing	No	No
Canada goose	Variety of habitat: shores of lakes, rivers, and reservoirs especially with cattails and bulrushes	Popular for hunting or viewing	No	No
Wood duck	Cavity nester along swift rivers	Popular for hunting or viewing	No	No
Gadwall	Concealed clumps of grasses in meadows and tall grasslands	Popular for hunting or viewing	No	No

Species	Habitat	Indicator For	Species or Habitat Present Analysis Area	Species or Habitat affected by Project
American wigeon	Wetlands in prairies, parklands, river deltas and ponds with grasslands	Popular for hunting or viewing	No	No
Mallard	Open water with emergent vegetation	Popular for hunting or viewing	No	No
Blue-winged teal	Marshes, lakes, ponds, slow-moving streams	Popular for hunting or viewing	No	No
Cinnamon teal	Cover of vegetation near shoreline	Popular for hunting or viewing	No	No
Northern shoveler	Grassy areas near water	Popular for hunting or viewing	No	No
Northern pintail	Open areas near water	Popular for hunting or viewing	No	No
Green-winged teal	Freshwater marshes with emergent vegetation	Popular for hunting or viewing	No	No
Canvas-back	Emergent vegetation	Popular for hunting or viewing	No	No
Redhead	Freshwater marshes and lakes concealed in vegetation	Popular for hunting or viewing	No	No
Ring-necked duck	Thick emergent vegetation on shorelines	Popular for hunting or viewing	No	No
Lesser scaup	Dry grassy areas near lakes at least 10 ft. deep	Popular for hunting or viewing	No	No
Common goldeneye	Cavity nester; uses ponds, lakes, rivers and costal bays	Popular for hunting or viewing	No	No
Barrow's goldeneye	Cavity nester; uses lakes, rivers, estuaries and bays	Popular for hunting or viewing	No	No
Bufflehead (See TES)	Utilizes tree cavities close to water	Popular for hunting or viewing	No	No
Hooded merganser	Cavity nester; found on wooded ponds, lakes, and wooded wetlands	Popular for hunting or viewing	No	No
Common merganser	Cavity nester; found on large bodies of water	Popular for hunting or viewing	No	No

Species	Habitat	Indicator For	Species or Habitat Present Analysis Area	Species or Habitat affected by Project
Ruddy duck	Freshwater marshes, lakes, ponds in dense vegetation	Popular for hunting or viewing	No	No

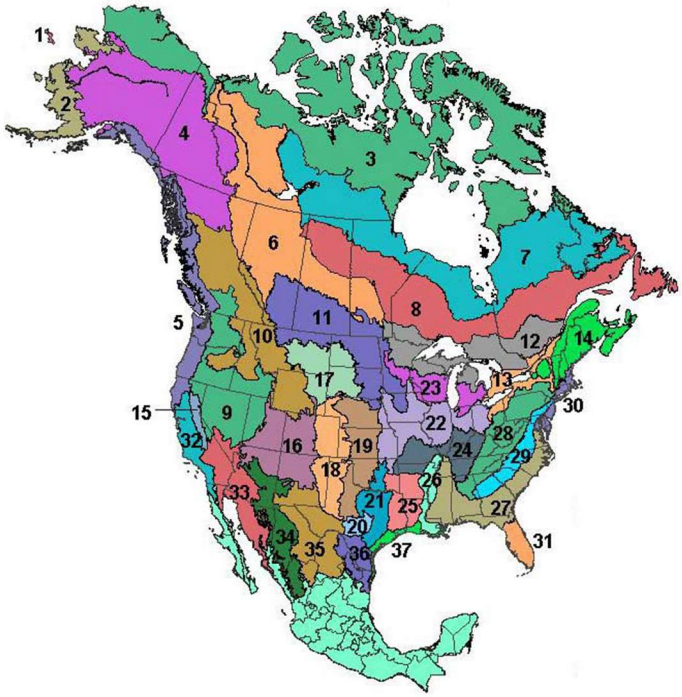
Direct, Indirect and Cumulative Effects
While habitat may be present for MIS species, the project does not include any ground-disturbing activities that could impact potential nesting or foraging sites in the WSR corridor, and would not alter current use. Forest-wide standards and guidelines for MIS would not change. Implementation of the WSR corridor boundary and management plan would not contribute toward a change in trends of viability for any of the MIS species on the Crescent Ranger District or Deschutes National Forest.

Birds of Conservation Concern (BCC)

In January 2001, President Clinton issued an executive order on migratory birds directing federal agencies to avoid or minimize the negative impact of their actions on migratory birds, and to take active steps to protect birds and their habitat. Within two years, federal agencies were required to develop a Memorandum of Understanding (MOU) with the U.S. Fish and Wildlife Service to conserve migratory birds including taking steps to restore and enhance habitat, prevent or abate pollution affecting birds, and incorporating migratory bird conservation into agency planning processes whenever possible. Toward meeting this end the U.S. Fish and Wildlife Service developed the *Birds of Conservation Concern* in 2002 (updated in 2008) and released the U.S. Shorebird Conservation Plan (2004).

The Birds of Conservation Concern (BCC) identifies species, subspecies, and populations of all migratory non-game birds that without additional conservation protection actions, are likely to become candidates for listing under the Endangered Species Act of 1973. While all of the bird species included in the BCC are priorities for conservation action, the list makes no finding with regard to whether they warrant consideration for ESA listing. The goal is to prevent or remove the need for additional ESA bird listings by implementing proactive management and conservation plans. The U.S. Shorebird Conservation Plan (USFWS 2004, revised 2007) updated the 2001 Plan with new information and developed a list of U.S. and Canadian shorebirds considered highly imperiled or of high conservation concern. Conservation measures were not included but these lists should be consulted to determine reasons for conservation concern.

Bird Conservations Regions (BCRs) were developed based on similar geographic parameters BCC Figure 1. One BCR encompasses the analysis area – BCR 9, Great Basin. BCC Table 1 displays the BCR species for this area, preferred habitat and whether suitable habitat is present in the project area.



BCC Figure 1. USFWS Bird Conservations Regions

BCC Table 1. Birds of Conservation Concern for the Great Basin Conservation Region 9

Bird Species	Preferred Habitat	Habitat Present in Analysis Area	Species or Habitat Affected by Project
Bald Eagle (b) ESA delisted	Associated with large bodies of water, forested areas near the ocean, along rivers, and at estuaries, lakes and reservoirs.	Yes	No
Black Rosy-finch	Rare in OR found above timberline among bare rock outcroppings, cirques, cliffs, and hanging snowfields.	No	No
Black Swift	Nests on ledges or shallow caves in steep rock faces and canyons, usually near or behind waterfalls and sea caves. Forages over forests and open areas in montane habitats.	No	No
Black-chinned Sparrow	Erratic presence in ceanothus and oak hillsides in SW OR.	No	No
Brewer's Sparrow	A sagebrush obligate found in shrublands of contiguous big sagebrush, greasewood, rabbitbrush, and shadescale habitats.	No	No
Calliope Hummingbird	Predominantly a montane species found in open shrub sapling seral stages (8-15 years) at higher elevations and riparian areas.	No	No
Eared Grebe (nb) non-breeding in this BCR	Found on shallow alkaline lakes and ponds where open water is intermixed with emergent vegetation.	No	No
Ferruginous Hawk	Occupy habitats with low tree densities and topographic relief in sagebrush plains of the high desert and bunchgrass prairies in the Blue Mtns.	No	No
Flammulated Owl	Associated with ponderosa pine forests and mixed conifer stands with a mean 67% canopy closure, open understory with dense patches of saplings or shrubs.	Yes	No

Bird Species	Preferred Habitat	Habitat Present in Analysis Area	Species or Habitat Affected by Project
Golden Eagle	Inhabits shrub-steppe, grassland, juniper and open ponderosa pine and mixed conifer/deciduous habitats preferring areas with open shrub component for foraging.	No	No
Greater Sage-Grouse (Columbia Basin DPS)	Sagebrush obligate, found E. of the Cascades. They require large expanses of sagebrush with healthy native understories of forbs.	No	No
Green-tailed Towhee	In OR prefers vigorous shrub stands with high shrub species diversity interspersed with trees.	No	No
Lewis's Woodpecker (See TES)	Ponderosa Pine, Cottonwood riparian or Oak habitats with an open canopy, brushy understory, dead and down material, available perches and abundant insects.	No	No
Loggerhead Shrike	Inhabits grasslands, pastures with fence rows, ag. fields, sagebrush with scattered juniper and open woodlands. Requires elevated perches throughout for hunting and nesting.	No	No
Long-billed Curlew	Open grassland areas E of the Cascades. Found in small numbers in estuaries along the coast.	No	No
Marbled Godwit (nb) non-breeding in this BCR	Migrant along the coast prefer coastal mudflats, sandy beaches, wet margins of large reservoirs or brackish lakes and sewage ponds.	No	No
Peregrine Falcon (b) ESA delisted (See TES)	Wide range of habitats, nests on cliff ledges, bridges, quarries.	Yes	No
Pinyon Jay	In OR, Pinyon-juniper woodland, sagebrush, and scrub oak habitats.	No	No
Sage Sparrow	Found in SE. and C. OR associated with semi-open evenly spaced shrubs 1-2 m high in big sage up to 6,800 ft.	No	No
Sage Thrasher	A sagebrush obligate dependent on large patches and expanses of sagebrush steppe and bitterbrush with shrub heights in the 30 - 60 cm height. Prefers bare ground over grassy understories.	No	No
Snowy Plover (c) non-listed subspecies or population of T&E species	E. of OR Cascades a summer resident breeding on alkali flats and salt ponds. On the S. OR coast they nest on open sand areas along the upper beach and on un-vegetated spits at mouths of small estuaries.	No	No
Tricolored Blackbird	OR colonies occur in hard stem bulrush, cattail, nettles, willows, and Himalayan blackberries.	No	No
Virginia's Warbler	In OR likes high elevation steep-sloped, xeric, pinion- juniper and oak woodland habitats.	No	No
White-headed Woodpecker (See TES)	Mixed conifer forests (< 40 % canopy cover) dominated by old growth Ponderosa Pine and open habitats where standing snags and scattered tall trees remain.	Yes	No
Williamson's Sapsucker (See MIS)	E. Cascades, mid to high elevation, mature open and mixed coniferous - deciduous forests. Snags are a critical component.	Yes	No
Willow Flycatcher (c) non-listed subspecies or population of T or E species.	Associated with riparian shrub dominated habitats, especially brushy/willow thickets. In SE WA also found in xeric brushy uplands.	Yes	No

Bird Species	Preferred Habitat	Habitat Present in Analysis Area	Species or Habitat Affected by Project
Yellow Rail (See TES)	Found in shallowly flooded sedge meadows at 4,100 – 5,000 ft. with a cover of senescent and live vegetation ~50%.	No	No
Yellow-billed Cuckoo (w. U.S. DPS)	No known breeding population in OR. Found in large expanses of riparian forest, particularly black cottonwood, Oregon ash and willow	No	No
Yellow-billed Loon	Winters along the coast from AK to Baja CA. Transients can be found on inland bodies of water.	No	No
(a) ESA candidate, (b) ESA delisted, (c) non-listed subspecies or population of Tor E species, (d) MBTA protection uncertain or lacking, (nb) non-breeding in this BCR.			

Potential Effects on BCC Species

While there is habitat for a number of BCC species within the WSR corridor, the project does not include any ground-disturbing activities. There would be no change in potential nesting or foraging sites in the WSR Corridor. There would be no direct, indirect or cumulative effects for any BCC species.

Landbird Conservation Strategy (LBCS)

The Forest Service has prepared a Landbird Strategic Plan (January 2016) to maintain, restore, and protect habitats necessary to sustain healthy migratory and resident bird populations to achieve biological objectives. The primary purpose of the strategic plan is to provide guidance for the Landbird Conservation Program and to focus efforts in a common direction. On a more local level, individuals from multiple agencies and organizations within the Oregon-Washington Chapter of Partners in Flight participated in developing a publication for conserving landbirds in this region. *A Conservation Strategy for Landbirds of the East-Slope of the Cascade Mountains in Oregon and Washington* was published in June 2000 (Altman 2000). This strategy has been used since its development in planning and projects analysis. The project falls within the Central Oregon subprovince. The species selected in the conservation strategy represent focal species for habitats types or features considered at risk. LBCS Table 1 shows the focal species for Central Oregon.

LBCS Table 1. Landbird Focal Species for Central Oregon

Habitat	Habitat Feature	Focal Species for Central Oregon	Present In the Analysis Area	Species or Habitat affected by project
Ponderosa Pine	Large patches of old forest with large trees	White-headed woodpecker	Yes	No
	Large trees	Pygmy nuthatch	Yes	No
	Open understory with regenerating pines	Chipping sparrow	No	No
	Patches of burned old forest	Lewis' woodpecker	No	No
Mixed Conifer Late-Successional	Large trees	Brown creeper	Yes	No
	Large snags	Williamson sapsucker	Yes	No
	Interspersion grassy openings/dense thickets	Flammulated owl	Yes	No
	Multi-layered/dense canopy	Hermit thrush	Yes	No
	Edges and openings created by wildfire	Olive-sided flycatcher	No	No
Lodgepole pine	Old growth	Black-backed woodpecker	Yes	No
Large Meadows	Wet/dry	Sandhill crane	No	No
Aspen	Large trees with regeneration	Red-naped sapsucker	No	No

Habitat	Habitat Feature	Focal Species for Central Oregon	Present In the Analysis Area	Species or Habitat affected by project
Subalpine fir	Patchy presence	Blue grouse	No	No
Whitebark pine	Old growth	Clark's nutcracker	No	No

Potential Effects on Landbird Focal Species

While habitat exists for several landbird focal species, the project does not include any ground-disturbing activities. There would be no change in potential nesting or foraging sites in the WSR Corridor. There would be no direct, indirect or cumulative effects for any landbird focal species.

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Memorandum of Understanding between the U.S. Department of Agriculture, Forest Service and the U.S. Fish and Wildlife Service to Promote the Conservation of Migratory Birds. (December 08, 2008)

NWFP SURVEY AND MANAGE SPECIES AND OTHER NWFP RECOMMENDATIONS.

SURVEY AND MANAGE (SM)

In 1994 the Northwest Forest Plan (NWFP) developed a system of reserves, Aquatic Conservation Strategy, and various standards and guidelines for the protection of old growth associated species. Mitigation measures were also included for species that were rare, or thought to be rare due to a lack of information about them. It was unknown whether the major elements of the NWFP would protect these species. These species collectively known as Survey and Manage species were included in standards and guidelines under Survey and Manage, Protection Buffers, and Protect Sites from Grazing.

In January 2001, a Record of Decision for Amendments to the Survey and Manage, Protection Buffer and other Mitigation Measures Standards and Guidelines (2001 amendment) was signed. This decision amended the NWFP Survey and Manage and related standards and guidelines to add clarity, remove duplication, increase or decrease levels of management for specific species based on new information, and established a process for making changes to management for individual species in the future (USDA 2001 pgs. ROD-1-3). Several attempts to remove Survey and Manage Species from management were made with an EIS in 2004 and again in 2007 and 2011. The Forest Service was sued and decisions were overturned and/or entered into settlement negotiations. A letter from the Regional Forester was issued May 13, 2014 provided direction for implementing the 2001 amendment. For this project the direction provided in 2.(b) was followed.

> *2.(b) The January 2001 ROD standards and guidelines and the December 2003 species list, except for the red tree vole which remains as Category C across its range, and/or the four categories of projects exempt from the Survey and Manage standards and guidelines as stipulated by Judge Pechman (October 11, 2006, "Pechman exemptions".) See Enclosure 3 for the December 2003 species list with red tree vole as Category C across its range.*

Survey and Manage animal species for the Deschutes National Forest includes the great gray owl, the evening fieldslug and the Crater Lake tightcoil snail. In April of 2004 the Crater Lake tightcoil was added to the Region 6 sensitive species list. This species have been previously discussed in the project's sensitive species section found in the Biological Evaluation.

The great gray owl was formerly a "Protection Buffer" category species in the 1994 Northwest Forest Plan. With the 2001 decision its status was changed to a "Survey and Manage" standard and guideline species and surveys are deemed practical. Because there are no habitat disturbing activities, no surveys were necessary.

Great Gray Owl - This species is associated with mature stands of mixed conifer/lodgepole pine/mountain hemlock near meadow complexes. Bull and Henjum (1990) found that great gray owls tended to nest in unlogged, mature or older stands with a fairly open understory and dense overstory (60 percent or greater) close to meadows. In a study that included portions of the Deschutes National Forest south of LaPine, Oregon, Bryan and Forsman (1987) determined canopy cover at 11 nest sites ranged from 15-70 percent with a mean of 46.5 percent. Studies have shown the extent of forested areas adjacent to the meadow edge is as important a habitat component as the forest-meadow ecotone (Williams 2012). Elevations at occupied sites ranged from 4,167 to 5,413 feet (1,270 to 1,650 meters), although great gray owls have been documented to occur at elevations up to 6,200 feet (1,890 meters) in eastern Oregon. There is potential nesting and foraging habitat for the great gray owl on the western portion of the WSR corridor. As the project does not include any ground-disturbing activities that could impact potential nesting or foraging sites in the WSR corridor, there would be no direct, indirect or cumulative effects.

Crater Lake Tightcoil Snail - The Crater Lake tightcoil snail, a survey and manage species, is now on the Regional Forester's R6 Sensitive species list. It is documented to occur on the Deschutes National Forest. Refer to the analysis in the biological evaluation section of this report.

Evening Fieldslug - The *Deroceras hersperium* slug species is one of the least known slugs in the Western United States. It is associated with perennially wet meadows in forested habitats; microsites include a variety low vegetation, litter and debris; rocks may also be used as refugia. This species appears to have high moisture requirements and is almost always found in or near herbaceous vegetation at the interface between soil and water, or under litter and other cover in wet situations where the soil and vegetation remains constantly saturated. Water levels in many streams in eastern Oregon may fluctuate too much and too quickly to provide streamside habitat with constant enough moisture conditions for this species (Burke 1998).

The evening field slug had not been confirmed to occur on the Crescent Ranger District, though a similar, more common species, *Deroceras levae,* has been found from previous survey efforts in Big Marsh. In 2013 Roth et al. published a paper on the taxonomic status of *Desoceras hesperium*. Their analysis found the two species were one and the same and that the *Deroseras hesperium* should be considered a junior synonym of *Deroceras leave*.

As the project does not include any ground-disturbing activities that could impact potential evening fieldslug habitat within the WSR corridor, there would be no direct, indirect or cumulative effects.

OTHER NWFP MANAGEMENT RECOMMENDATIONS

White-headed woodpecker, Black-backed woodpecker, Pygmy nuthatch and Flammulated Owl.
Because the mitigation measures for riparian habitat protection or other elements of the NWFP does not sufficiently address the white-headed woodpecker, black-backed woodpecker, pygmy nuthatch and flammulated owl, the 2001 amendment included standards and guidelines and management recommendations specifically for these species. Standard and guidelines call for adequate numbers of large snags and green-tree replacements for future snags to maintain 100 percent of potential population levels of these species within appropriate forest types within the range of the four species. (USDA 2001, S&G - 33).

Management recommendations were established to meet the Standards and Guidelines for these four species and out lined in the following table.

SM Table 1. Survey and Manage Management Recommendations

Species	Snag Species	Diameter and density	Forest type	Exceptions/Considerations
All Species	All	retail all snags over 20"dbh	All	Snags over 20" may be cut only if sufficient numbers to meet 100% potential population levels of all 4 species is met. Hazard trees that meet a standardized definition may be felled.
White-headed woodpecker (also provides for Pygmy nuthatches)	ponderosa pine or Douglas-fir	15" dbh or larger, or largest available, 0.6/acre	ponderosa pine or mixed pine/Douglas-fir	Snags should be in the soft decay stages.
Black-backed woodpecker	All	17" dbh or larger, or largest available 0.12/acre	high elevation mixed conifer or lodgepole pine	
Flammulated owls	It is assumed that standards and guidelines for snags and green tree replacements for woodpeckers and other cavity nesting species would provide for flammulated owls.			

While there is habitat within the analysis area for all four species, there are no proposed actions that would alter that habitat. There would be no direct, indirect or cumulative effects on these species.

Bats - Bats occurring in the Pacific Northwest roost and hibernate in a variety of crevices or caverns that commonly include caves, mines, snags, and decadent trees, wooden bridges and old buildings. Provision for retention of large snags and decadent trees are included in the standard and guidelines for green tree patches in

the Matrix. The S&G in the 2001 amendment applies to all land allocations. Caves, abandoned mines, abandoned wooden bridges and abandoned buildings used by bats are to be protected from destruction, vandalism and disturbance from road construction, blasting, or other activities that could change the microclimate conditions or drainage patterns affecting bat use (USDA2001 S&G-37). Management recommendations are outlined in the regional memorandum dated September 12, 2012 (O:\NFS\OchocoDeschutes\Program\Wildlife-2600\GuidanceDirection\bats\BatsAndBuildings).

There are no caves, abandoned mines, in or adjacent to the project area. There is a bridge that crosses Crescent Creek that provides bat habitat. There are also rock outcrops and formations, large trees and snags that could provide roosting and maternity habitat for some species. (See also sensitive bats in the TES sections of this report). As the project does not include any ground-disturbing activities that could impact potential habitat in the WSR corridor, there would be no direct, indirect or cumulative effects.

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